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GENERAL INDEX.

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ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE SURGICAL ASPECTS OF BENIGN LESIONS OF THE BREAST.*

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As the public is becoming better educated to the fact that cancer, if operated on in its early stages, is often curable the medical profession is being consulted more often for advice concerning tumors of the breast. The character of the advice given to such patients is very important. Delay in advising proper surgical interference when it is indicated, may eventually cause the patient's death; on the other hand, it certainly is undesirable to advise unnecessary operation.

Experience has shown that the error in diagnosis of mammary lesions is larger than is usually supposed. McCarty has shown that 5.5 per cent of such tumors diagnosed malignant in the

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Mayo Clinic prove to be benign, and that 11.2 per cent of those diagnosed benign prove to be malignant. If such an error occurs generally, and it certainly must, it shows the difficulty in distinguishing clinically between benign and malignant conditions of the breast.

Cancer of the breast begins as a local disease. We have reason to believe that it originates from cells which in some way lose their normal characteristics, and it is unreasonable to assume that it develops without some preliminary disturbance in the tissues. During its incipiency, persons affected with cancer do not show symptoms and, as a rule, it is only after the growth has ulcerated or involved the glands that constitutional effects of the disease become manifest.

If the history of surgery for cancer of the breast is studied, the marked improvement in the results obtained at the present time as compared with those obtained some years ago will be noted. For many years cancer of the breast was looked on as a constitutional disease and all persons affected were expected to die. With improvement in the surgical technic came an increase in the number of cures. During recent years the percentage of cures has further increased because earlier operations have been performed.

In the last series of cases of cancer of the breast studied in the Mayo Clinic, in which 218 consecutive patients were traced, it was found that 64 per cent of patients operated on before the glands were involved, were alive from five to eight years after operation, while only 19 per cent of those operated on after glandular involvement could be demonstrated were alive a similar length of time. It was also found that when cancers were operated on very early, even simple amputations of the breast gave surprisingly good results. For example, simple amputation of the breast alone was performed on six patients for supposed chronic mastitis which later proved to be carcinoma, and four (66.6 per cent) were alive and free from recurrence from five to eight years after operation. One patient was well and without recurrence when last heard from, two years after operation. The sixth patient could not be traced. The difference in the results obtained in early cases and in those in which the glands are involved at the time of operation is very striking, and noth-

ing can show more clearly the need of the early recognition of malignancy in the breast if patients are to be given the greatest chance for cure. If all cancers of the breast could be recognized early, it is probable that 75 or 80 per cent of the patients could be permanently cured.

Solid tumors of the breast and tight cysts which cannot be differentiated from solid tumors should be removed as soon as discovered. The most common of these tumors are fibromas, fibromyxomas, and fibro-adenomas. Every now and then we find a carcinoma which has developed in one of these tumors. A bloody discharge from the nipple, even if no tumor could be demonstrated, has so often been proved to be caused by a papilloma in one of the ducts that surgeons very generally recognize this condition as an indication for a simple amputation of the breast. We know that these papillomas often become malignant and, as they are usually multiple, a simple amputation is the procedure of choice. Surgeons so generally agree with regard to the treatment of these conditions that nothing more need be said concerning this phase of breast surgery.

Probably the most common lesion of the breast, except cancer, for which the surgeon is consulted, is chronic mastitis, and it is in such cases that he has the greatest difficulty in deciding just what treatment to advise. A certain type of chronic mastitis is often seen clinically in young women. This condition is usually *bilateral*, and nodular masses form in the *breasts*, although in some instances a single localized mass may be present in one breast. These masses change from time to time; they may disappear entirely, and later reappear in other portions of the breast. The disease is usually associated with pain in the breast, down the arms or in the chest. The skin is not attached to the mass and, as a rule, the glands in the axilla are not enlarged. During the menstrual periods the pain increases and often the mass becomes tender and enlarged. Occasionally definite cysts form, but not so often in this type of mastitis as in the type seen in older women.

A second type of mastitis is seen clinically in women from thirty-five to fifty years of age, which has been described under various names, such as chronic cystic mastitis, abnormal involution, Reclus' disease, Schimmelbusch's disease, and atypical hy-

pertrophic parenchymatous hypertrophy of the breast. Some patients have this type of mastitis without symptoms, but oftener it produces pain in the breast, chest, or arms. Both breasts are usually involved. The skin is never adherent to the breast and only occasionally are the axiliary glands palpable. In some instances there may be a watery, straw-colored or greenish discharge from the nipple. On palpation numerous masses may be felt throughout both breasts and very often cysts of various sizes are recognized. In this type of mastitis marked changes may occur in the epithelium lining the acini, and cysts of various sizes may form in the acini and ducts. The condition occurs at an age when cancer is most likely to develop and it is often difficult clinically to differentiate it from cancer.

Cancer which develops as a single tumor usually can easily be distinguished from mastitis, but diffuse carcinomas of the breast may present a picture so similar to that seen in chronic, cystic mastitis that it is impossible to differentiate the two. Occasionally also a definite chronic mastitis is seen and with it is associated one or more small but definite carcinomas which may be situated in different portions of the breast. Certain microscopic pictures also are seen in chronic mastitis which so closely resemble malignancy that skilled pathologists have great difficulty in making a diagnosis.

The true relationship between chronic, cystic mastitis, precancerous conditions of the breast, and true cancer has been discussed by competent pathologists for many years, but to the present time differences of opinion exist. Many pathologists believe that there is a distinct relationship between cancer and chronic cystic mastitis in women over forty. A very large proportion of the breasts removed for cancer show definite mastitis on microscopic examination. It must be said, however, that chronic, cystic mastitis in the breast is seldom seen to progress until it is definitely transformed into cancer. Reports have been published of the results following operations for mastitis when the entire breast had not been removed, and in very few instances has it been found that cancer developed later.

The medical treatment of chronic, cystic mastitis is unsatisfactory. Besides the wearing of a tight-fitting brassière to support the breast and the occasional application of a weak solution

of tincture of iodine or of mercurial ointment very little can be done. Roentgen ray has been suggested as a means of treatment, but thus far little has been accomplished by its use. The disease in young women has a tendency to change from time to time, and in many instances spontaneously cures itself. As cancer is comparatively rare in young persons, this type of mastitis need cause no special anxiety. In older women the process known as chronic, cystic mastitis usually disappears after the menopause. Before the menopause it is difficult to cure the condition by any medical measures. In young women it may become necessary to remove a localized area of mastitis on account of excessive pain or because cysts have formed which produce a tumor suggestive of malignancy, but before operating the patient should be warned that the disease may later recur in another portion of the breast.

Just how far surgeons should go in advising surgery in chronic, cystic mastitis in women from thirty-five to fifty years of age is difficult to determine; they are being confronted with this problem more often than ever before. As the condition usually involves various parts of the breast at different times, local excision of involved areas is of no value. One hesitates to advise amputation for chronic, cystic mastitis when there is no evidence of malignancy, because experience shows that such patients seldom develop cancer.

There is a group, however, which constitutes a small percentage of the patients consulting the surgeon for chronic, cystic mastitis, in which it is impossible to determine clinically that malignancy is not present, and in this group we are justified in more radical procedures. We know from experience that when such a breast is amputated, besides the mastitis, one or more small carcinomas may be found in entirely different portions of the breast; in some instances the entire breast may be involved with diffuse carcinoma. Diffuse carcinomas were found in sixteen of the 218 patients comprising the last series of patients with cancer of the breast studied in the Mayo Clinic, and it is reasonable to believe that these cancers must have developed on pre-existing mastitis. Cancer of this type, in our experience, has invariably proved fatal within five years. Unfortunately, in cases of mastitis in which malignancy is suspected,

very little is to be gained by removing a portion of the breast for examination, as the cancer, should it be present, may not be in the specimen removed, and the only definite means of discovering the cancer is by removing the entire breast for examination. If one delays in advising amputation in such cases the golden opportunity to cure the patient may be lost.

I do not believe that suspicion of malignancy justifies radical amputation. Single solid tumors or tight cysts which resemble carcinoma should be removed with an area of tissue surrounding them for immediate microscopic examination before the radical measure is resorted to. In cases of abnormal involution in women over forty, in which malignancy is suspected it is probably best to remove the entire breast for examination. A competent pathologist should make frozen sections from the tissues most suspected, and if he finds the condition is malignant an immediate radical amputation should be performed. We have records of a number of patients operated on in this manner who have remained well.

Localized tumors may be removed with very little deformity through an incision along the outer edge of the breast of the type described by Warren. A subcutaneous amputation may also be performed through this incision and the nipple saved. In thin patients with small breasts very little deformity results. The question of mutilation which has been brought up as a reason for avoiding surgical procedures must certainly be considered lightly in cases in which malignancy is suspected.

Bloodgood has recently published articles dealing with the surgical treatment of certain benign conditions of the breast. He, no doubt, is correct in the main in the interpretations he has made from his observations and studies. While it is probable that a surgeon of his surgical and pathologic experience may be able to differentiate grossly the different types of cysts, and so forth, which he describes and to decide just what should be done in a given case, it will be difficult for those of us with less experience always to make such distinctions with certainty. The blue-domed cyst he mentions is undoubtedly a benign cyst, but the mere finding of such a cyst does not mean that a carcinoma may not be present in some other portion of the breast. As he suggests, some breasts, which could be saved, are sacrificed each

year, but is it not better occasionally to sacrifice a breast in which malignancy may never develop than to overlook an early cancer which could have been recognized in no other way?

We cannot expect further improvement in the results from operation for cancer of the breast from a change in the technic of the radical operation as it is performed by most surgeons at the present time. Recurrences in early cases come mainly in positions which will never be accessible to the knife and the only chance of bettering results lies in earlier operation. If all cancers could be discovered through exploratory operations before definite clinical diagnoses are possible, a very high percentage of patients would be permanently cured. Certainly the results now obtained will not be improved by the "watching and waiting" policy; this has already cost thousands of lives. I could cite many examples of patients who have come to the Clinic because of cancer of the breast, which had reached an extreme stage while being watched by either the patient or a physician.

As the public becomes better educated, surgeons will no doubt be consulted oftener for tumors of the breast which in reality do not exist. After careful examination in these cases, the surgeon must be able to say that no tumor is present. These patients should be kept under observation until it is certain that the trouble complained of has completely disappeared. I think it may safely be stated that the conservative policy in dealing with conditions of the breast in which the question of malignancy enters at all will, even in the hands of the best surgeons, tend only to increase the number of deaths from cancer.

DISCUSSION.

Dr. E. D. Martin (New Orleans): This is one of the most important subjects that we have to deal with. The great trouble is that the majority of us who do this work are not equipped to do it as we should. We are not all in position to get results as thoroughly as an institution like the Mayo clinic. Dr. Sistrunk has gone over the subject very thoroughly and I am glad to see that the pendulum is swinging back. About the time I began to do surgery we were taught that all breast tumors should be amputated and a great many are still doing it. Now, the time has come when we are told that not all tumors should be operated. Some time ago I came to this conclusion from my own observations, that we were operating on too many inoperable cases. We were operating on cases of mastitis in old people who probably would live longer without the operation and we were operating on cases of suspected conditions which did

not require operation. The result is that I am doing fewer operations every year. In the service I have at the Charity Hospital we have a great many of these cases, but unfortunately they come when the condition is hopeless. At one time we did operate these cases because we were taught that radical operation would save a great many, but experience soon taught us that after a certain time we could not reach the condition and we were simply endangering the lives of our patients.

I am very sorry that the doctor did not go more fully into detail; but as he has said, the diagnosis of malignant or non-malignant condition is most difficult, and it is only such men as Bloodgood and men who have seen so many of these cases who can differentiate. In young women these cystic conditions are very common, especially in neurotics and also in older women who have borne children and have not nursed them. These cases are doubtful. In many cases they are not malignant but the difficulty is to decide which are malignant and which are not. I have made it a rule to keep them under observation and operate on such cases as are giving annoyance, because many times the tumors are such a menace to the mental condition that they ask for operation. I am glad to say that a great many of these cases can be done by simple removal of the breast—a sub-dermal operation. For years I have done the Warren operation.

It is hard to tell anyone just when these cases should be operated on. The type we get at the hospital are usually negroes. They do not consult anyone until they suffer from pain. We are doing fewer and fewer operations, however, every year. One thing is certain, people are better educated. They have heard so much propaganda that a woman should come to the office in time when she has a pain in the breast. Sometimes this is due to nothing more than a pendatous breast and with a brassier they are relieved. But they are coming earlier at any rate, and what I want to emphasize is that all of the fibrous tumors should be removed or kept under observation.

The doctor calls your attention to one important point, and that is, that the man who is not equipped with a pathologist should not operate on these cases. I believe for the safety of the patient he had better send her to someone who is equipped to make the diagnosis. The question of diagnosis by gross-examination is difficult. A few weeks ago a very stout woman came to my office and all I could detect was an axillary gland. I began the operation not thinking of any malignancy, and by dissecting out the gland I found the axilla was full of large carcinomatous glands. The primary focus was not bigger than the end of my finger and was found after a careful dissection. It was impossible for anyone to have diagnosed that case, but because she had suffered pain for three months we determined to do an exploratory operation. The question is not easy. It is simpler in the thin patients, but the whole thing in a nutshell is to determine when it is malignant, and that I cannot tell you how to do.

Dr. C. C. Crawford (Bienville): This is an important subject, but due to the vast amount of propaganda, we have educated the women to come to us early. I think it is a great pity for a man like Bloodgood, after educating the women to come early, to now decry what he terms mutilating operations. We are not all like Bloodgood, but we want working rules when we can get them. I think Dr. Sistrunk has helped us wonderfully. The simple tumor

seldom becomes malignant and these we can locally remove; but the mastitis we see occasionally with bloody discharge, the breast should be sacrificed. I believe we should err on the side of sacrificing a healthy breast if you are in doubt. If I am in doubt I take it out.

Dr. Peter B. Salatich: I think pain is a valuable sign in a good many of these chronic mastitis cases. I recall a case I operated some time ago. I watched this woman for several years and I suggested operating under local, but she said it did not hurt. About three weeks before she decided to be operated, it began to give her pain. I removed the growth, a purely cystic growth and sent it down for section, and the report returned malignancy. I removed the entire breast at the same sitting.

One thing I want to ask the doctor—I have about three women now who have a green discharge and I do not know what to do with them. One has had it for over ten years. I have palpated her, but am unable to find any signs of either pain or mass in the breast. They object to having the breast removed unless I give them a good reason for doing so.

Dr. J. A. Danna (New Orleans): I am glad to hear, coming from a clinic where everything is done with scientific accuracy, a plea for judging these cases from a clinical standpoint. In other words, you can tell more if you have had lots of experience in handling breasts of that kind than even microscopic sections will tell you. It is a plea for the old clinician, it is a plea for the development of the old qualities of telling things by observation. I want to bring out that point a little further. A number of years ago Dr. McCarty, of the Mayo clinic, made a diagnosis from a rush section. I came home and told the men that, because they had repeatedly told me it could not be done. So I asked Dr. McCarty about it and he said: "I used to think it could not be done myself, but as time goes on I have developed the ability to discriminate between the cancer field and that which does not contain cancer cells." And now I am able to tell you that the men I was working with at that time have developed the clinical ability to make a rush section and tell whether it is malignant. If you will do this every time you have a case after a while you will get to the place where you can make a rush diagnosis.

Dr. J. A. Lanford (New Orleans): Until we know the actual cause of malignancy, we cannot lay down any hard and fast rules for the handling of all conditions of the breast, which are associated with a tumor mass. We do not know whether the malignancy results from a chronic irritative process, from a displaced cell or a specific type of infection.

However, it would be of help if all tumors of the breast which are not clinically malignant as evidenced by retraction of the nipple or adherence to the skin, be removed in their entirety and submitted for a microscopic study. (I am speaking, of course, of those cases which at the time of operation could not be submitted for a rush section.) In that way you have done what is the best possible for your patient.

I am inclined to think that it is much better to remove a breast that is benign, than later have to remove it following a pathological report of malignancy, because the manipulation incident to the removal of the malignant piece of tissue for microscopic study breaks

away a few of the tumor cells, which find their way in the lymph channels to be carried to more or less distant parts of the body.

Dr. E. D. Martin: We are having our pathologist examine these cases before operation. Does your pathologist see all cases before operation?

Dr. W. E. Sistrunk (in closing): No, he does not. If he wishes to know anything clinically about the case, he comes in and asks and we furnish him with the data he wishes.

In regard to the question of Doctor Salatich, as to whether we should amputate the breast from which there is a greenish discharge, I do not think we should. The fact that a woman has a mastitis does not mean that the breast should be removed. Hundreds of such cases probably never will develop cancer.

Since I selected this subject for my paper I have had a half dozen poorly handled cases come to my attention, which stand out so definitely that I wish to relate them. About two weeks ago Doctor Judd removed a breast for a supposed mastitis. Clinically the condition was benign. He saw in the specimen removed the blue-domed cysts mentioned by Bloodgood, and mentioned these as being an indication of benignancy. So sure was he that the condition was benign that he left the assistant to close the wound. The pathologist then reported the breast as malignant. A radical amputation was immediately done and the axillary glands were found to be involved.

A few days afterwards Doctor Mason operated upon a female doctor, removing the breast for a supposed mastitis associated with a small fibroma. The mastitis and the fibroma were found when the breast was sectioned, and in addition to this a small but definite carcinoma about as big as the end of my little finger.

One afternoon recently I saw in consultation two patients with breast tumors. One had a breast tumor for four months that had been treated by local applications. She was found to have an extensive involvement of the skin with a fixed mass in the axilla. There were numerous malignant nodules in the skin which extended backward through the axilla to the scapular region. The condition was inoperable.

The same afternoon I saw another patient with a breast tumor near the nipple. It was impossible to say whether this was benign or malignant. I advised removal for microscopical diagnosis. This woman had been through the hands of five doctors in a few months and every one except the last one advised that the tumor be left alone. I could cite a number of similar cases. A woman on whom I recently did an amputation of the breast for carcinoma with involvement of the axillary glands had seen a doctor in November who advised her to leave the tumor alone; she saw him again in February and the same advice was given. In March she was told by the same doctor that the condition was suspicious and operation was advised. Another woman upon whom I operated recently for carcinoma had been told three months before that her breast was normal and to stop worrying about it. So you see how important the diagnosis of breast tumors is. If malignancy is overlooked, the patient loses the golden opportunity for a cure.

My paper sums it up in this way: I think the solid tumors should be removed. A small percentage of these become malignant but

I do not believe that breast cancers come largely from these growths. Mastitis in young women is not serious and often develops in different parts of the breast. Local incisions of such areas do not do much good, as the condition tends to recur in other portions of the breast. Leave them alone unless you are compelled to do something in a surgical way on account of excessive pain or the formation of areas which suggest malignancy. In older women who develop mastitis the question becomes an important one. If the condition in no way resembles malignancy, clinically, I think it should be left alone. However, if it is impossible, clinically, to rule out malignancy, I believe the only way that this can be ruled out is by performing a simple amputation of the breast. The removal of an area for microscopical diagnosis in such cases is not a safe procedure as shown by the fact that every now and then in such cases we find a very small carcinoma in an area of mastitis which probably would have been left had the breast not been amputated.

CAESAREAN SECTION UNDER LOCAL ANESTHESIA, IN PUERPURAL ECLAMPSIA.*

By J. A. HENDRICK, M.D., Shreveport, La.

It is not the purpose of this paper to discuss the symptoms and treatment of various forms of toxemias during pregnancies, but to place before you a study of a certain type of case that has come under our observation at the Highland Clinic. In the past four years we have admitted fifteen cases falling in this class. In five of these, Cæsarean section was done under general anesthesia with the loss of two patients. In the last ten cases, we delivered by Cæsarean section under local anesthesia, with no loss of life to the mothers or babies, except in one case, that of a fœtus which had been dead for several days.

The cases herewith reported were full-term pregnancies, presenting the symptom complex of eclampsia,—profoundly toxic, convulsions frequent and severe, labor not set in and no dilatation of the cervix,—rendering the condition so grave that delivery by some method was frankly indicated on admission.

There were *four methods of delivery* to be considered:

1. Introduction of bags with the idea of stimulating uterine contractions and delivery as in a normal case or assisted by forceps.

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*Read before the Louisiana State Medical Society Annual Meeting, April 11 to 13, 1922.

2. General anesthesia, rapid dilatation of cervix and delivery by forceps or version.

3. Cæsarean section under general anesthesia.

4. Cæsarean section under local anesthesia.

Discussion: 1. On account of the toxic condition, and the amount of morphine or other drugs given to control convulsions, introduction of bags has proven to be a failure, as uterine contractions necessary to dilate the cervix and precipitate labor cannot be established. In one case a large bag remained in the cervix for 48 hours with no effort at delivery.

2. *General anesthesia*, with rapid manual dilatation of the cervix (which is not very rapid unless it is torn) and delivery by high forceps or version, certainly carries with it great danger to mother and child. It can hardly be done under two hours. The shock and mutilation to the mother, the great danger to the child, and the length of time the anesthetic is necessarily administered, with certainly increased toxic condition, puts the method out of consideration.

3. *Caesarean section* under *general* anesthesia is in our opinion second choice, but the anesthetic undoubtedly throws an extra burden on the patient and is followed by nausea which interferes with the post-operative management of the case.

4. *Caesarean section* under *local* anesthesia is by far the safest method of delivery. It can be done in a very short time, with no pain, no shock, no added toxemia, and no nausea following operation to interfere with the administration of fluids, or any treatment deemed indicated as soon as the patient reaches her room.

I feel certain that had a general anesthetic been given in our last ten cases, the records would not have been so good, and in looking back over my past experience with high forceps and general anesthetics, etc., in this class of cases, I can recall several that I am confident would not have proven fatal as they did, had Cæsarean section been done under local anesthesia.

Case 4586. F. V., Shreveport, La. Colored. Age 23. First pregnancy. Previous history not important. Entered Sanitarium on September 24th, 1921, in comatose condition. Had a number of convulsions the night previous, and was seen by family

physician, who referred her to the Sanitarium. She was operated under local at 11:40, and operation was completed at 12:15. Patient came out of coma on day following, and gradually improved, going on to a normal convalescence so that she was able to go home on the 12th day.

Case 5430. Mrs. H. M., Arcadia, La. White. Age 38. First pregnancy. Previous history not important. Was 9 months pregnant when admitted to Sanitarium, and was profoundly toxic. Family physician had made frequent urinalyses during period of pregnancy on account of her age, and saw her about a half hour before her first convulsion, which occurred April 8th, 1921, previous to which time she had been feeling fine. Urinalysis made the week before had showed no albumen. As soon as physician had reached his office following a visit to patient, her husband came for him, saying that she had just had a severe convulsion. From that time until the next day when she was operated on, she had about 18 convulsions, all very severe. Labor had not commenced, the cervix was not dilated, and felt very rigid. Soon after reaching the Sanitarium she was taken to the operating room and delivered under local anesthesia of a full-term baby girl. Mrs. M. left Sanitarium on April 24th, in good condition. Urine still showed some albumen. She had no more convulsions following delivery, her mind cleared up in about 3 days, and convalescence was normal.

Case 5598. Mrs. L. M., Shongaloo, La. White. Age 23. First pregnancy. Past history not important. Entered Sanitarium May 22, 1921, giving history of having had repeated convulsions in the past 24 hours, which were very severe. She was in a comatose state, and eyesight was markedly impaired, so that she was unable to distinguish people around the bed. Urine was scanty, with a quantity of albumen. P. S. T. test 1st hour was 2½, 2nd hour 5, and 3rd hour 2½. Her condition gradually grew worse, labor had not set in, cervix was not dilated. Caesarean section under local was done on the 23rd, with delivery of a full-term baby. Patient had one convulsion after she reached her room. Her mental condition gradually cleared up, and she went on to a good recovery, leaving the Sanitarium on June 11th, 1921. Urine was practically clear at this time.

Case 5549. Mrs. L. B. T., Coushatta, La. White. Age 31. Mother of one child. 8½ months pregnant. A week previous to entering the Sanitarium she complained of having trouble with her eyes, and suffered with headaches. The day before she entered the hospital she had a severe convulsion, at which time family physician gave her an opiate to relieve the convulsions, also a large dose of calomel. However, between this time and the next morning, on April 16th, 1921, she had 3 more convulsions and it was decided to bring her to the Sanitarium for delivery. Urine was very scanty, with a quantity of albumen, pus and casts. As there was no dilation, and the toxic condition was great, an immediate Caesarean section under local was done, with the delivery of a foetus which had been dead for several days. There were no more convulsions. The toxic condition gradually cleared up, and she left the Sanitarium May 1st, feeling fairly well. There was some albumen in the urine at this time.

Case 6676. Mrs. B. C., Cedar Grove, La. White. Age 28. Patient 9 months pregnant. Entered Sanitarium January 22, 1922, in an unconscious state. She had suddenly become nauseated and blind, and soon went into convulsions which were very close to-

gether (22 in all). She did not regain consciousness until after baby was delivered on the 23rd. Previous history was negative except that she did not feel very well at times. Caesarean section was done under local, with the delivery of a rather small baby. The mother regained consciousness on the second day, and was discharged from the Sanitarium February 9th, in good condition. Post-operative course showed gradual improvement from the time of operation.

Case 5991. Mrs. C. J. H., Grand Bayou, La. White. 8½ months pregnant. Entered Sanitarium August 18th, 1921, in comatose condition since the previous day. History of rapid and severe convulsions. Delivery under local of a healthy baby. Convalescence with gradual improvement from time of operation until time of discharge on September 3, 1921.

Case 5820. M. M. Colored. Age 21. Full-term pregnancy. Toxic condition about the usual course as in previous cases. Delivered under local of a healthy baby. Left Sanitarium in good condition on the 12th day.

Case 4560. M. C. Colored. Age 19. Entered Sanitarium in comatose condition. History about as in above case. Delivered under local of a healthy baby. Left Sanitarium in 15 days in good condition.

Case 4296. C. S. Colored. Age 28. Entered Sanitarium in comatose condition. History of convulsions for previous 24 hours. Labor had not set in, there was no dilatation. She was delivered under local. Mother and child were able to go home in 12 days.

Case 4632. L. W. Colored. Extremely toxic. Rapid convulsions during past 48 hours, no labor pains, no dilatation. Urine scanty. Delivered under local of a healthy baby girl. Was able to leave Sanitarium in 15 days.

IMPORTANCE OF VAGINAL DRAINAGE IN PELVIC INFECTIONS.*

By JOHN F. DICKS, M. D.

Pelvic infections present a problem of great interest to the gynecologist. Numerous attempts at classifying these conditions on the basis of etiology, pathological lesions encountered, or clinical course, have all proven more or less abortive. Murphy presents a very elaborate classification based on both etiology and route of infection. Possibly the simplest classification which can be offered is that of—1st, primary Neisserian infection; 2nd, post partal, and 3rd, post abortal infections, the latter two resulting from the invasion of any of a number of micro-organisms. On the basis of such a suggested classification, we may possibly attempt a differentiation of the pathological lesions en-

*Read before Orleans Parish Medical Society, May 22nd, 1922.

countered. In the Neisserian type of infection the organism enters the cervix and spreads by continuity of surfaces up the cervical mucosa to the endometrium and thence to the tube. Here there results a true *intra tubal* infection. As the process advances the frimbriated extremity of the tube closes and the termination is commonly a well defined collection of pus within the tube itself—the typical pus tube. From the tube, infection may spread by contiguity directly through tissue spaces to the ovary, in which a tubo-ovarian abscess results. In *a few* cases the infection is so overwhelming that sealing of the fimbriated extremities of the tube does not take place readily, and organisms traverse the length of the tube and reach the general peritoneal cavity, eventuating in a typical peritoneal invasion.

In the postpartal and the postabortal types the pathology is very probably entirely different from that outlined above. Here we are dealing with an extra-tubal infection, the invasion being primarily outside of the tube, usually having its origin in the cervix or lower uterine segment. We must remember that this lower uterine segment is the lowest resistent portion of the uterus to infection, this being due to its vascularity and to the numerous lymph channels which radiate into the broad ligament. During delivery or following an abortion the cervix is traumatized and organisms are introduced; they spread rapidly along the lymph channels between the layers of the broad ligament, and the termination is often abscess formation within the folds of the broad ligament. This comprises the *true* pelvic abscess. This form of abscess generally has no relation to the tube, though it has the same pathology as an abscess in any other part of the body.

Considering the treatment of pelvic inflammatory conditions, we find that the Neisserian or intra-tubal type responds readily to the *rest plan*. Rupture rarely occurs spontaneously. Absolute rest in bed, hot douches, ice cap to abdomen, and liquids freely are indicated. The pain and temperature subside, the condition becomes localized and surgery can be resorted to eventually. It is well to say here that there are four cardinal laws that should be followed before doing an abdominal section for Neisserian infection.

1. The pain and tenderness must subside.

2. The temperature must be normal at least two weeks before operation.

3. There should not be a rise in temperature after a vaginal examination.

4. The total leucocytes must be normal.

The longer the patient rests the easier the surgical procedure and the subsequent recovery of the patient.

Many patients with the *extra-tubal type of infection will respond* nicely to rest and the above described plan of treatment, but there are a few that do not. These few are the ones which prompt me to present the subject of pelvic infection for discussion. In these cases the pain continues, the temperature rises, and the patient loses ground, presenting the typical picture of sepsis. Vaginal examination will reveal a large fluctuating mass in one side of the cul de sac. Abdominal operation would avail nothing. The only thing that would be accomplished by such a procedure being the opening of the broad ligament and spilling the contents of the abscessed cavity into the general peritoneal cavity. If left alone there is one of two things that will happen. Either the abscess will rupture into the vagina or rectum, or it will rupture into the peritoneal cavity with the usual fatal result. *It is in such cases that vaginal drainage may be a life saver.* The technique is simple and many a life may be spared if the type of infection can be recognized and a vaginal drainage done instead of entering the abdominal cavity from above. There are a few points in the technique of importance, and I think it would be of interest to bring them out here. The cervix is grasped with a volcellum and drawn down as far as possible. A transverse incision is made in the vaginal mucous membrane just below the cervix, in the mid-line, a knife being used. It is important to keep in the mid-line in order to avoid the uterine vessels and to only use a knife in sectioning the mucous membrane. Now, with a pair of blunt scissors or with the finger, tunnel up toward the bulging mass and rupture it. A rubber drain is then inserted into the cavity and left *in situ.* We have long since abandoned the custom of irrigating, for fear of spreading infection. The important points in post operative care are to

elevate the head of the bed and see that the drainage tube does not become occluded. It is well to allow the tube to remain in place until all drainage has ceased and the temperature has subsided for a few days.

The symptoms of a ruptured pelvic abscess are typical: the onset is sudden, there is violent abdominal pain, rigidity, nausea, vomiting, a rapid drop in temperature and a rise in pulse rate. Death usually occurs in 12 to 24 hours. The following report of a case of rupture of a broad ligament abscess should emphasize the importance of drainage.

White, female, age about 38. Admitted to the ward May 11, 1920. Because of her inability to speak English and no Spanish interpreter being available a complete history was not obtained.

Her appearance was that of one who had had temperature for some time, with mucous membranes pale and lips parched. Aside from this fact she was a robust specimen weighing about 190 pounds, stocky, with an abdominal wall about two inches in thickness.

Palpating the abdomen, a mass reaching nearly to the umbilicus was felt. There was some rigidity and pain on deep pressure. Vaginal examination revealed a large mass filling the posterior cul de sac, above which could be felt a hard mass about the size of a clenched fist, probably a uterine myoma. *At no time during the examination did* the patient appear to be seriously ill. Her temperature was 101, pulse 92, no nausea or vomiting and no indication for surgical interference.

About twelve midnight the patient began to complain of severe abdominal pain. But the nurse did not consider it serious and the intern was not notified until 1 A. M. He called me at once, and I reached the hospital in 30 minutes. The woman's condition was practically hopeless, her radial pulse being imperceptible. She was cyanosed and her abdomen was distended and rigid. It was thought best to give her a chance. She was taken to the operating room and hypodermoclysis was started. The abdominal wall was then infiltrated with Novocaine, and a few whiffs of ether given. When the cavity was opened pus rushed out and the patient died on the table. The abdomen

was not further investigated in the operating room because of the large amount of purulent material. A partial autopsy was obtained the next morning, and revealed a large true pelvic abscess, originating in the broad ligament; the left tube and ovary were acutely inflamed but there were no evidences of a tubo-ovarian abscess. The posterior surface of the broad ligament had ruptured and pus had entered the peritoneal cavity. As I stated before no history could be obtained from this patient but we feel sure from the pathology that this was a post abortal or post partal type of infection.

Had this patient been drained vaginally before the rupture I believe her life would have been saved.

DISCUSSION.

Dr. F. T. Brown: I think Dr. Dicks should be congratulated for his most interesting paper on pelvic drainage. We all should practice more conservatism in these pelvic infections.

In acute cases they should be rested up from 10 days to a month, and examinations and blood counts made weekly. If we find a bulging mass by vaginal or rectal examination, an exploration should be made with aspirating needle of large size. If pus is found we should make a good big opening and use large rubber tubes for drainage, as Dr. Dicks states, and do a second operation later if necessary.

Dr. E. D. Martin: The word "importance" can well be emphasized, for though there is nothing new to be said, it is just as well to discuss a paper of this kind occasionally, and Dr. Dicks deserves the thanks of the Association for going over the matter so thoroughly. Those of us who have had experience with pelvic inflammation know the importance of the subject and realize that the differential diagnosis is, after all, one half of the treatment. In the case of pyosalpinx, we have learned today that rest and an ice bag to the abdomen, in acute cases, will give better results than operation. In fact, not long ago Dr. Clark, in looking up the statistics of the subject at the hospital, found that the mortality was high in those wards where immediate operation was resorted to. So strongly was this emphasized, that the white patients now have a cooling ward, as it is called, for the purpose of allowing them to pull through the acute stage, until such time as these pus tubes become thoroughly sterile, when an operation can be done with little risk. The broad ligament abscess which so commonly follows abortions must be dealt with through the vagina, and I do not believe it is always necessary to wait until we have fluctuation to drain. As soon as a mass can be felt in the posterior cul de sac, the method of drainage suggested by Dr. Dicks may be used. Dr. Brown stated that in some of these cases he had difficulty with drainage, as the tube would come out and it was necessary to reinsert it several times. This could be obviated by the use of a T tube, the cross pieces being long enough to go well beyond the edges of the opening in the vagina. In addition, I would like to add to this two strips of iodoform gauze packed on either side of the tube for several days, which I believe is a decided advantage.

Dr. F. R. Gomila: Dr. Dicks' paper was very timely and one that deserves a great deal of consideration, especially from the viewpoint of the comfort of the patient. Dr. Dicks deserves credit for bringing such a paper before the Society at this time.

However, in mentioning the modes of infection he omitted mentioning another type of infection which occurs by migration of organism through the intestinal coats into the peritoneal cavity, causing an inflammatory condition to follow.

This is very well brought out in cases of appendices where the organisms have penetrated the coats of the intestine causing abscesses resembling very much the pelvic abscess and so diagnosed. Yet the abscesses are truly appediceal in character.

The method of treatment could not be improved upon except in doing colpotomies. Should you ever get blood it may mean an ectopic gestation and not pelvic abscess; I know of two such cases which occurred very recently. Where colpotomy was done in one case, blood escaping, nothing further than "packing" was instituted; the patient consequently had further trouble from the ectopic gestation and was operated on. Her condition was so bad, however, she did not survive after the proper treatment for ectopic gestation.

I might mention here the possible reason for the greater natural resistance of the female over the male pelvis. I do believe that the reason for this lies in the fact that the female pelvis communicates indirectly with the outside, which is not true in any part of the peritoneal cavity of the male. This explains why the female pelvis can stand so many abuses and infection.

I wish to again state that Dr. Dicks should be complimented for his excellent paper.

INTRAVENOUS INJECTIONS OF AN ORGANIC CALCIUM SALT IN THE TREATMENT OF TUBERCULOSIS.*

By Dr. J. P. LOBENHOFFER.

You will perhaps remember that some few years ago there appeared brief notices in several journals that Prof. La Monaco, Rome, had treated a number of cases of tuberculosis with intravenous solutions of cane sugar, getting gratifying results. No detailed description of his method has ever appeared in the scientific journals and this line of research seems to have been dropped again, probably owing to the stress of the world war. A letter of inquiry to the Pharmacological Institute of the University of Rome has remained unanswered. But La Monaco's work seemed to reopen the old controversy of the utility of cal-

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cium in the treatment of tuberculosis, for it was apparently based on the greater solubility of that element in carbohydrates of the pentose, hexose and heptose groups. It appeared to the writer to be worth while to investigate this question more closely, especially as Mandl, an Austrian, reported about the same time very satisfactory results from Intravenous Injections of Calcium Chloride in the treatment of intestinal tuberculosis.

Much has been said and written, both pro and con, concerning the therapeutic efficiency of calcium in tuberculosis, but no really conclusive evidence has been brought forward on either side. During the spring and summer of 1918 the writer began therefore to look more closely into this question and to devote such time as he could spare from other duties during those stirring days to the study of the efficiency of calcium solutions in tuberculosis.

One of the chief obstacles in the therapeutic use of lime has always been the lack of solubility of most of its salts, and La Monaco's work pointed to a way out of this difficulty. Why could not some of the alcohols of the hexose and heptose group be used as carriers? They had recently been used by industrial chemists for the same purpose and had been found useful. Permit me to present to you the theoretical considerations and some of the results obtained during this work. Owing to the chronic nature of the disease and the comparatively short time, I have no very long series of definite cures to lay before you, but I believe the prospect to be favorable, as the treatment to be outlined quite closely resembles nature's own method of healing tubercular lesions.

It is scarcely necessary to recall here that Naegelis' assertion concerning the frequency of spontaneously healed tubercular lesions in bodies reaching the autopsy table has been confirmed again and again. Nature employs two reactions for this spontaneous healing, first a biological or tissue and immunity reaction and, secondly, a biochemical one. The tissue reaction consists of the formation of epitheliod, giant and connective tissue cells with a round cell infiltration, the whole being known as a granuloma. The immunity reactions resemble those of other infections and consist of antitoxin, bac-

teriolysin agglutin, etc., formation. The biochemical reaction is mainly a process of calcium deposit.

Our efforts at actively treating tuberculosis have chiefly been directed towards increasing the first two reactions by the administration of tuberculin X-ray and light treatment, etc., or to simply treating the symptoms as they arise. The morbidity and mortality figures show that the results have not been uniformly satisfactory. Only little work has been done towards stimulating the biochemical reactions. It has been considered preferable to favor spontaneous healing by putting the patient at rest, decreasing pulmonary effort as much as possible by supplying him with a maximum amount of fresh air and by feeding him abundantly. From time to time attempts were made to introduce an additional amount of calcium by mouth, but no clear-cut results were obtained. Still, several facts pointed towards rather close connection between the biochemical and the biological reactions. Hamburger and Hekma (Biochem. Zeitschrift, Vol. 9, Pg. 275) showed, for instance, that calcium stimulates the leucocytic functions considerably, and especially the lypolytic function of the round cells, which it increases as much as 22%. This throws some additional light on the round cell infiltration of fresh tubercular lesions. We need but to remember, that the tubercular bacillus possesses a rather thick fatty envelope, to understand why the lymphocytes secreting their fat dissolving tipase are attracted to the lesion. If we therefore find a way to increase the biochemical reaction or rather the amount of calcium reaching the lesion, we exert a favorable influence on at least one of the biological reactions. But first we had to determine how the lime salts reach the tubercular lesion and how they are deposited in the tubercular lesion.

During the process of tubercular infection an amino acid called tuberculosamin is found, which resembles creatin in its structure, containing like the latter two amino and one imino groups. Another similar acid, called chonorosamine is found in bone cartilage and is now thought to act as a catalytic agent in the deposit of mineral salts during bone formation. These amino acids, while not possessing the same reactivity as the mineral and many organic acids, are still able to ionize loosely bound salts of "*organic*" acids. We shall see directly why stress is

laid on the word "*organic.*" Tuberculosamin seems to be a metabolic product of the tubercle bacillus, as cultures on artificial media show traces of its presence. It was always found in the infected tissue of control animals. When it reacts with an organic salt of a base, as for instance calcium, it does not combine with the nascent base, as it is like all acids of this class only weakly reacting, but the base combines with the much more active CO-2, to form a bicarbonate or with a phosphoric acid radical to form a phosphate. These are the salts which we find deposited in the tubercular ulcer which has healed spontaneously. We shall revert to this point later.

The next step in this investigation naturally concerned itself with the origin of the calcium thus found in the healed tubercular focus. How and in what form was it carried there? We know that the blood normally contains about 10 milligrammes calcium in 100 C. C., mainly in the form of phosphate and chloride, the so-called blood calcium. This small quantity plays an important part in the formation and function of the ferments of coagulation, but it certainly is not available for furnishing the material used in healing tubercular lesions. A far more extensive deposit is found in the bony frame. But here it is in the form of insoluble salts in firm inorganic combination. Tuberculosamin on the other hand, the catalyser, if you please, which sets the base free, does not possess enough reactivity to break up such firmly bound inorganic combinations. One must therefore admit that the inorganic salts of the blood stream and of the bony frame are a very unlikely source of the material used. Numerous direct investigations have borne this out. To mention only one, let me call attention to the work of Halverson Mahler and Berteim (Journal A. M. A., May 5th, 1917). They examined the calcium content of the blood in a series of cases of tuberculosis picked at random from the wards of Jefferson Hospital in Philadelphia and found only very insignificant changes from normal.

The question therefore arose if they were not some other sources from which the body could draw the lime. In this connection, the so-called food calcium at once presented itself for consideration. Let us take as an example that article of diet richest in that element, milk. Although today not so much

stress is laid on it as a prominent ingredient of the diet of the tubercular as formerly, it and its derivatives are still looked upon with favor on account of the high number of calories it represents. But it is not only its nutritive value but also its richness in Ca which makes it valuable, for it contains a relatively large amount of that element, chiefly destined to serve as building material for the bony frame during the first independent period of life. Let us consider this point for a moment. At birth the skeleton consists, of course, mainly of cartilage with certain centers of ossification; the actual mineralization occurs only later. Milk being the only food provided by nature for the young of any species of mammals, it must necessarily contain the mineral salts needed for the development of the bony frame. Lime, while not all, forms a large part of the salts. Cow's milk for instance contains normally about 1 gramme of Ca per liter, human milk a trifle more. While discussing the Ca content of the blood a few minutes ago, we have already seen the comparatively slight solubility and the small quantity of the lime salts in that fluid. The question now arises, why the milk should be able to contain ten times more Ca than the blood, when it is secreted by glands which receive their raw material from the blood and lymph vessels, and why the lime should be so much more soluble in the milk. Here we have the crux of the whole problem. The answer lies, as already indicated, in the greater solubility of Ca in the presence of certain carbohydrates (lactose in the case of milk), with which it can under certain circumstances even enter into direct combination to form organic compounds. While the different chemical combinations which the lime undergoes from the time of its entrance into the mammary gland up to its absorption into the body have, to the writer's knowledge, not yet all been definitely cleared up, it is well known that it does not form an inorganic chloride with the HCl of the stomach, but that during the curd formation it combines with the nucleinic acid group of the casein and passes with the paracasein into the small intestine, where it is absorbed as a soluble neutral tribasic salt.

We have thus in the food Ca an ample source of lime in organic combination not so firmly bound that it cannot be decomposed by the amino acid present in the tubercular lesion, and ready to be utilized in the natural process of healing. Knowing

the process nature employs in the biochemical reaction of spontaneous healing, could we not imitate her method and find an organic calcium salt, easily soluble, with loosely bound anion, readily separated by the mildly reactive amino acid, and which could be introduced directly into the circulation, preferably intravenously?

As already indicated, the carbohydrates of the hexose and heptose group were our most promising material. Lactose was of course the first choice. But for a number of reasons, especially its somewhat unstable composition, it was soon found to be unsuitable. Experiments with saccharose also showed several undesirable features of the resulting compounds. Glucose was next tried as a carrier for the lime. Here the results were much more favorable. This alcohol of the hexose series had frequently been used intravenously in solution of 33% and over; so there was no reason to fear toxic results. A number of combinations were tried out on various animals and it was finally determined that by oxidation an easily soluble Ca salt could be formed which corresponded in its essential properties to the salt obsorbed from the small intestine. A 20% solution was well tolerated by rabbits at the rate of 0.4 grammes of the salt per kilogramme of body weight provided the solution was given slowly. This amount would be equal to 24 grammes for a man weighing 60 kilo. Each molecule of this compound contains 9.3% of elementary Ca loosely linked to a combustible anion. After the liberation of the base the latter can be utilized by the body in the same manner as the other carbohydrates of this class.

A series of experiments was carried out on guinea pigs, dogs and rabbits and later on on man, which showed that a 5% solution in distilled water was most satisfactory, also stronger solutions were fairly well borne, too. A long series of injections so far given by myself and others failed to show any alarming symptoms. In the last few months, a few reactions have occurred which were apparently caused by changes in the H-ion concentration of the solution after standing a few hours. This has been overcome by using only very fresh solutions. We are now engaged in preparing buffer solutions as suggested by Siagle of Rochester, Minnesota, to avoid these changes. At first, a few patients described a few peculiar sensations of heat commencing

in the mucous membrane of the mouth and extending occasionally over the entire surface of the body, but disappearing after a few minutes. Other observers mention a similar heat wave following the intravenous use of Ca Cl-2. Our first human dose was in the beginning 50 c. c. of the 5% solution. This was followed in a few days by 60 c. c. then 80 and several doses of 100 c. c. each. Later on it was found that we could begin with 100 c. c. in adults increasing the following doses to 150 c. c. Even 200 c. c., representing 10 grammes of the dry salt, was repeatedly tolerated without difficulty. While the high solubility of the salt permits many variations in the concentration, the 5% solution, which is almost isotonic with the blood, is the best. I would like to call your attention to the fact that the 150 c. c. dose contains about half as much Ca as the entire blood stream yet there is no change in the coagulability. This is additional proof that the salt we use is not changed into an inorganic one when entering the blood stream as only the latter can influence coagulation. Even twenty-four hours after the administration of 150 c. c. the same results were observed.

Now how is this supply of organic Ca utilized by the body? A check up of the various secretions shows no abnormal increase of Ca eliminated within twenty-four hours after its administration. It is evidently disposed of in the same way as the food Ca absorbed from the small intestine. When it comes in contact with some substance it can react with, as for instance the tuberculosamin of a lesion, there occurs a decomposition of the salt. But the nascent Ca does not react with that feeble anion, as we have seen, with the much more active CO-2 to form a carbonate or bicorbonate, or with a phosphoric acid radicle to form a phosphate. The proof you say? Van Slyke in his classical work on acidosis has shown very strikingly that all tissues of the body contain CO-2 in sufficient quantities and tension to combine with all cations not firmly bound. The resulting salts are mostly bicarbonates. And does not this form of Ca represent an appreciable part of the material used in spontaneous healing? And how about a phosphate? While the complete ever changing chemistry of intravital metabolism is not yet known in all its details it is certain that the protein molecule in splitting up continually liberates phosphoric anions which readily combine with the nascent Ca cation to form the corresponding salt. In

this connection it may be of interest to quote some remarks recently made by Prof. Starkenstein of the University of Prague who has published a long series of observation on the chemistry and pharmacology of calcium. In one of his late publications which appeared last September in "Therapeutische Halbmonatshefte," he discusses, among other things, some experiments made in Stransky's laboratory in Vienna and says: "The therapeutic activity of calcium does not depend so much on the quantity introduced as on the anion of the salt used. Salts with combustible anions are converted into carbonates and phosphates with combustion of the anion." The salt we are using exactly fits this description.

And now what have been the practical concrete results of this treatment? The writer does not propose to make the mistake of looking for miraculous results and does not imagine that we can build up a wall around an extensive lesion and get a clean-cut separation of diseased and healthy tissue with a few intravenous injections. In dealing with a disease like tuberculosis, in which the patient is subject to so many variations and which so often heals spontaneously, differences of opinion must always exist. He and others have treated a number of patients in this manner with gratifying results, but the 200 cases so far observed are hardly sufficient to give a picture clear-cut enough to arrive at final results. Several patients who received the injections when almost in extremis have since died, though even they showed a temporary improvement, consisting of a decided drop in the temperature curve, a decrease of the distressing cough and a noticeable diminution of the number of the bacilli.

The injections were first tried on 14 guinea pigs and eight rabbits. They were innoculated with the sputum from several tubercular patients containing large amounts of bacilli. When they began to show distinct symptoms of the disease consisting of increase body temperature and loss of weight, they received a number of injections of the Ca salt. Several of them were killed at varying periods after the treatment; the control animals perish of tuberculosis within nine to eleven weeks after inoculation, which demonstrated the virulence of the material used. They showed tubercular foci in the lungs, glands and intestine.

The treated animals showed similar lesions. One pig even had a diffuse meningitis which was distinctly tubercular. The first evidence of healing was found in two pigs after the third injection; there was an irregular deposit of Ca in and around the connective tissue cells surrounding the lesion. With hæmatoxylon-eosin staining the deposit appeared as dark blueish spots with irregular outline. The guinea pigs and four rabbits which received eight injections of three hundred milligrammes per 100 grammes of body weight each apparently recovered. Two pigs killed three months after the last treatment showed healed lesions in the mesenteric glands and one of them had two healed foci in the right lung. One pig, however, after apparently doing well up to the sixth injection, began to refuse food and was found dead in its cage one morning six days after the last injection.

Unfortunately the attendant disposed of it in the absence of the technician without a postmortem being made.

The first patient submitted to the treatment was a young white man, R. B., age 26, with advanced pulmonary tuberculosis. He had heard of our work and begged to have the treatment tried out on him, as his family physician had told him that he had only a few weeks to live at best. The upper left lung was almost entirely honeycombed, he had had several hemorrhages and his breathing was quite rapid and shallow. I refused, of course, explaining that nothing short of a miracle could replace destroyed lung tissue and that I could not see what could be gained by simply experimenting on him. He and his mother and sister insisted however and I finally consented, figuring that it would be a good opportunity to find how much of the organic lime salt a man in his condition could tolerate. He received an initial dose of 50 c. c. of the 5% solution, followed by three more of 60, 80 and 100 c. c. each at intervals of ten days. I am not prepared to say that the patient would not have done as well under glucose injections, but was greatly astonished to see that he gradually improved. His evening temperature fell from 103° to 100.4°, his appetite increased, the respiration became fuller, he even gained a little and felt much better. The writer was then called into the government srvice (it was October, 1918) and thus was unable to follow the case up, but he was

told that the patient was again able to partly resume his duties as a switch tender, but died of pneumonia in January, 1919, during the second flu wave. Nobody seems to have taken enough interest in the case to hold a postmortem, so it is chiefly of value, because it demonstrated that even advance cases of phtisis pulmonalis rather large doses of organic lime can be given in this manner without deletorious effect, and even with benefit.

During the summer of 1919 the experiments could be partly resumed. The first case treated during this period was Mrs. W. B., age 28, who was found with a well developed case of pulmonary tuberculosis, many organisms being present in the sputum. She received a total of seven injections, the first one consisting of 100 c. c., then six of 150 c. c. each, making a total of 1000 c. c., or 50 grammes of the organic Ca salt. Having had the case under continual observation I know that she had no other medication whatever outside of enough quinine to control an attack of tertian malaria which developed during the latter part of the treatment. During the first two weeks the patient was kept in bed, after that she was allowed to sit up and sew and perform light household duties. After the first injection, her temperature dropped from 102.8° to 101° and was 100.5° two days before the second treatment. The absolute rest in bed may have contributed to this drop. After the third injection, the temperature curve had flattened out to 98.2°-99°, the bacilli disappeared from the sputum and the body weight steadily increased. An acute malarial infection about the end of September was easily controlled and did not seem to interfere with the favorable course of the case. In February of 1920 she had gained 14 kilogrammes over her weight in August, 1919, and was able to perform all duties connected with the household comprising her husband, his brother and four children without special fatigue. An X-ray plate taken at that time showed an oblong shadow in the upper part of the right lung pointing downward and outward. The sputum was frequently examined, from the fourth treatment on it was always negative. When last seen the patient was still doing well and maintained her improvement.

Another interesting case of this series was that of M. H. F., age 42, and highly intelligent, but correspondingly choleric and

crabby jurist, who suffered from milliary tuberculosis complicated by chronic tertian malaria and a chronic B. coli cystitis and pyelitis with a rather irregular heart beat. He was greatly emaciated and quite unable to follow his profession. Not much was expected from the treatment in his case, as he declared that "he had been carrying the blasted bugs around for twenty years." He was given the treatment indicated for the complications and also a series of injections of the lime salt on account of the cardiac arrhythmia, we divided each dose into two parts, giving one-half on the first and the rest on the second dose. This was not really necessary, as the pulse always became fuller and more regular during the injections, but it was kept up on account of the irritable and sensitive condition of the patient; he received a total of eight doses, which were gradually increased to 180 c. c.,—90 c. c. each day. He improved slowly and within two months he could reappear in court and work most of the day in his office without excessive fatigue. The number of tubercular bacili in the sputum decreased slowly, but they did not disappear altogether until after the sixth treatment. It is worth while mentioning that at first they were found all over the slide, but as the case progressed the free organisms disappeared and only a small number of intracellular ones were seen incapsulated in small mononuclears.

Another series of cases included only patients suffering from surgical tuberculosis. Here some quite striking results were obtained. A typical case was that of a commercial traveler who had been laid up with a fungus. For three months before he was seen, he was an inmate of the City Hospital of B. and had had all kinds of treatment, including passive hyperæmia, X-ray, heliotherapy, etc., without any benefit whatever. There was much swelling of the joint, complete loss of motion and severe pain below the knee requiring medication to allow him to sleep. His condition was progressively becoming worse. On June the 10th, 1921, he received the first treatment consisting of 100 c. c.; after the third treatment he left the hospital and went home, greatly improved. He returned for the fourth injection and showed continued progress, the swelling had gone down to about one-third the size, there was complete freedom of motion and absence of pain below the knee. He went back on the road about a week later and did not return any more; in fact nothing was

heard of him after that—he even forgot to send the check. In the adjoining bed was a patient with a tuberculous arthritis of the left wrist who showed similar good results. But I will not take up your time with enumeration of cases which would only mean a repetition. If the treatment is of value, and I believe it is, it will soon take its proper place in the treatment of tuberculosis; if not, mere words will not make it so.

Not much need to be said about the technique. The usual gravity apparatus of the simplest possible construction is the best. The use of warm saline solution to begin and end each treatment assures accuracy of doses. A small gauge needle should be used as it is quite essential to give the solution slowly. If so used no symptoms are noticeable even with 150 c. c. and over; if it is given too fast on the other hand the heat wave may be felt and nausea may develop.

In conclusion, the writer would repeat that a number of cases so far treated and the time they have been under observation are not yet sufficient to form a final opinion of the pertinent value of this treatment. He believes, however, that it is a step in a direction which will lead to good results. At all events he has demonstrated that in this form much larger doses of Ca can be given without harm than had been supposed. Ca has been given parenterically by several research workers, but nobody has paid much attention to the anion of the salt used. Five c. c. of Ca, Cl-2, in five per cent solution has been so far the maximum given. The introduction of inorganic salts to stimulate the biochemical and through it the biological reaction is useless, for they can not be ionized and utilized for the formation of other compounds. Nature has shown us how she deals with tubercular foci, but she uses organic compounds in the process of spontaneous healing.* The writer has intended to find a similar salt through which as large a quantity of Ca as possible could be introduced directly into the circulation without causing undesirable effects. He has been permitted to glimpse into the wonderful workshop of nature, our great teacher, and has tried to imitate her methods.

*This process usually takes the form of fibrosis, complete calcification being the exception. But all fibrosed foci show some areas of calcium deposit. Calcium exerts a favorable influence on healing by stimulating round cell infiltration, especially the lipolytic and phagocytic functions of the small mononuclears.

DISCUSSION.

Dr. Wallace J. Durel: Since I first attended the meetings of the National Tuberculosis Association in 1906, the use of Calcium in Tuberculosis has been repeatedly discussed. However, the value of Calcium in Tuberculosis remains a doubtful question.

In the cases cited, the Essayist seemed to lay special stress upon the fact that "Spontaneous healing in Tuberculosis is favored by the intravenous administration of Organic Calcium."

This assertion should be made reservedly, for no one has given any proof that such is a fact. Autopsy findings verify beyond question, that healing of tubercles and tuberculous ulcertations occurs chiefly by fibrosis, and that calcification plays only a minor part in the permanent healing of tuberculosis.

Calcified areas in a healed lung comprise but a small percentage of the healed tissues; and then, calcified areas unfortunately too frequently embody caseous material with virulent tubercle bacilli.

Therefore, calcification is not Nature's ideal process of healing in tuberculosis, but fibrosis, acquired by the stimulation and proliferation of the fixed tissue and leucocytic cells, should be our main objective in attaining a permanent healing of tubercles and tuberculous ulcerations.

In the cases cited by the Essayist, he did not say whether the skiagraphs taken showed more extensive areas of calcification in the lungs of the cases treated with intravenous injections of Organic Calcium, than the cases not treated with calcium.

Relative to the improvement of said cases, that is, the gain in weight, fall of temperature, etc., he does not state whether this improvement was more marked in his cases than in the ordinary case treated by the hygienic-dietetic treatment.

Spontaneous healing often occurs when we least expect it. We have recently discharged from the Breaux Building (Charity Hospital) an advanced tuberculous whose lesions healed spontaneously, and we cannot ascribe any definite reason for this healing.

As was stated in the previous paper and also at the last meeting of the National Tuberculosis Association, the deposit of Calcium in the lungs of animals treated with excessive doses of calcium did not exceed that of animals fed with ordinary food calcium.

The Essayist should be encouraged in his present work and I do hope he will give us, in the near future, a more tangible evidence as to the value of Calcium Intravenously in the treatment of Tuberculosis.

Until there are sufficient proofs and post-mortem findings showing that Calcium hastens the process of healing of tubercles and tuberculous ulcerations, we should approach the matter conservatively, and restrict its use, at present, to the experimental field.

ACUTE INFECTIONS IN THE SPASMOPHILIC CHILD.*

LUDO VON MEYSENBUG, A. B., M. D., Instructor in Pediatrics, Tulane University, New Orleans, La.

The condition of spasmophilia has been recognized for a good many years and has formed the subject of much research both here and abroad. To the investigations of Erb are we indebted for an exact quantitative estimation of the condition by means of the electrical excitability of the peripheral nerves.

It is well at the outset to bear in mind that the so-called Spasmophilic Diathesis comprises two groups of cases, viz, those manifesting, in addition to the increased electrical irritability, convulsions, carpo-pedal spasm, Chvostek and Trousseau's signs laryngospasm and pylorospasm, for which the term tetany is reserved, and those presenting the signs but not the symptoms: increased electrical excitability, Chvostek's sign and possibly also Trousseau's sign. This last group we call spasmophilia.

It is generally agreed that infants under two years who show the Erb's electrical phenomenon, Chvostek's and Trousseau's signs have tetany. Such infants have a disturbed calcium metabolism as shown by a negative calcium balance and a lowered blood calcium. In the consideration of the older child we are lost in a maze of dispute. Some investigators, notably Stheeman[1], have claimed that children of five or six years who show Erb's phenomenon, with or without Chvostek's sign, are subject to various gastro-intestinal disturbances, instability of the central nervous system, petit mal, breath holding spells, absences, etc. Others do not believe that the electrical reactions which are characteristic of spasmophilia in infancy can be interpreted as such in older children and adults. Sedgwick[2] on the other hand, assuming that the spasmophilic reactions of the infant could be translated to the adult was able to demonstrate such reactions in the parents and grandparents of infants with tetany. This raised the question of heredity and familial tendency.

Altho Sedgwick's work was criticised on the ground that nothing is known with regard to the reactions of older children and adults, and he was therefore not justified in his assumption, nevertheless, we see spasmophilia most frequently in children of

*Read before the Orleans Parish Medical Society, May 22nd, 1922.

neurotic and high-strung parents who very frequently exhibit Chvostek's sign and in whose homes excitement is apt to prevail.

Two years ago I[3] studied a group of children in an institution in the north between the ages of 2 and 7 years and found that over 60% of them gave electrical reactions characteristic of spasmophilia. Very few of these manifested any gastro-intestinal disorders, petit mal, enuresis or Chvotek's sign. Blood calcium studies in these children showed no variation from the normal. Young infants, however, do have a reduced blood calcium when their electrical irritability is increased, as shown by Howland and Mariott[4] and others.

From the close observation of infants over a period of a year or more in the institution I was able to ascertain the following events: One infant, entering the institution at the age of 2 months, had convulsions and laryngospasm one month later. At the age of 5 months the electrical reactions were very definitely spasmophilic, the c. o. c. being 2 ma. At this time the blood calcium was 8.8 mg. per 100 c. c. plasma. There were no symptoms of tetany. During the late spring this infant, then 7 months old, developed a slight cold with temperature of 100 to 101 degrees F. It immediately had a convulsion and larngospasm. A year later this child appeared to be perfectly normal in every respect and the electrical reactions did not show spasmophilia. Upon developing another cold with fever the child became spastic but had no convulsions. The electrical reactions showed spasmophilia.

Such a sequence of events throws a good deal of light on the many cases of acute infections that we see in private practice, which are accompanied by mild convulsions, twitching of various muscles, crowing inspirations, etc.

I recently saw a boy 2½ years old suffering from an acute attack of grippe. The temperature was 103 and the parents became much alarmed when he suddenly had convulsions early one morning. I was able to elicit Chvostek's sign but no Trousseau. The electrical reactions we unfortunately could not determine. This boy had never had convulsions before.

As to the treatment of those cases, a good deal depends upon the management of the parents and the home, but we see at

once that it is a difficult matter to overcome neurosis in the mother. However, by duly impressing the parents with the fact that the child even at 2 years has a great deal of intelligence, can understand what is being said about it and that therefore its ailments should be discussed in another room, much can be accomplished toward quieting the child and especially in preventing the development of neurosis in later life. For the immediate relief of the convulsions nothing works so well as chloral hydrate given by rectum. To a child of 2 years ten grains may be safely given. These cases have a lowered blood calcium and we know that this can be raised by the administration of calcium by mouth. Perhaps the best form of calcium to use is the calcium bromide in 5 to 10 grain doses every three hours. This may be combined with a little sugar of milk. It should not, however, be given in combination with soda bicarbonate, for the Ca ion and the Na ion have an antagonistic action. Several observers, particularly Marriott have reported the development of active tetany after the administration of large doses of soda bicarbonate to infants, in whom an acidotic state was changed to one of alkalosis.

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DISCUSSION.

Dr. J. Signorelli: When considering the subject of Spasmophilia we should not lose sight of the fact that we are dealing with a nervous system—central and peripheral—which is below par in the matter of stability and resistance. As the essayist has brought out, the influence in these children is not that of the Spasmophilic Diathesis upon the infectious disease, but rather conversely in a sense, the effect of the acute infection upon a non-stable and irritable nervous system whose resistance is so low that the convulsive seizure results. Indeed these children are known to be "susceptible" to frequent convulsive attacks upon the slightest cause.

Surely, while heredity may have only a lesser part in the existence of a Spasmophilic Diathesis, environment and diet play a marked and direct part.

As to the treatment of these seizures, the method or management whether occurring in conjunction with an infectious disease or independently, is first to obtain relaxation, and that as quickly as pos-

sible. For this we should employ what is most often nearest at hand, and than which nothing is more efficacious, namely: a hot bath; the bowels should next be cleared by enemata; and then, sedatives, such as chloral hydrate and bromides administred.

Let us bear in mind, though, that this is merely emergency management, and not curative treatment. For the cure of the Spasmophile tendency there is required proper dieting and the administration of Calcium for the correction of its deficiency as brought out by the essayist. This need not be furnished in the form of Calcium Bromide, but any of the other salts of the drug. I employ the Lactate, Cloride or Bromide of Calcium, but never continue the administration for an idefinite period lest there result from too much of the drug deleterious effects and place me in the position of one treating Acidosis with an alkali in so large a quantity and over so long a period as to change the Acidosis to an Alkalosis. What is required is the maintenance of the proper calcium content of the blood.

I feel that the essayist is to be commended for bringing the subject to our attention in such a form as he has; not giving us so much as to cause confusion of thoughts and yet enough to make us think seriously of the subject.

Dr. Guthrie: Dr. Von Meysenbug voices a modern tendency in the title of his paper. Some of us who belong to a little older vintage are inclined to consider spasmophilia as an evidence of inherited neurosis.

Let me emphasize the importance of the hot bath as an emergency measure. Chloral is probably the best drug we have and can be used by rectum while the child is in the hot bath. In my own experience there is an effect from chloral much quicker than twenty minutes after its instillation into the rectum.

Dr. Von Meysenbug has given us food for thought in expounding the theory of calcium metabolism in these cases. I believe, however, that only a small proportion of these cases will be found dependent on this cause.

Let us never forget the necessity for a very thorough psychologic examination of patient and forebears. Also let us look for a definite flow in calcium metabolism and direct treatment along this line if it exists.

WHY RADIUM IS LOOKED UPON WITH DISFAVOR BY SOME OF OUR PROFESSION.*

By CHAS. H. VOSS, A. B,, M. D., New Orleans, La.

Of the large number of therapeutic agents in use today, how many enjoy the distinction of being universally accepted as specific for disease? Among those so considered how many affect a cure? What per cent of these arrest disease or cause a definite improvement temporary or permanent? Radium enjoys this last distinction.

Each therapeutic agent has its champion to proclaim its beneficial properties in combating disease, but the medical profession accepts no such claim without reservation and it is only after due trial by the profession that any therapeutic agent receives any recognition at all. A new remedy grows more popular as increasing numbers of the profession become convinced of its value and are ready to champion its cause, otherwise it soon falls into disfavor and is cast aside. Every new discovery in medicine and surgery must pass through this experimental stage where careful and conscientious work will demonstrate its usefulness.

Radium has gone through this experimental stage. Its usefulness is being demonstrated daily to the satisfaction of both patient and physician. Now the question, "why are there some among our ranks who look upon it with disfavor?"

First I want to ask a few questions about some of our popular therapeutic agents of today. Why are vaccines, with few exceptions, looked upon by some authorities as of little or no value, while by other as great authorities they are heralded as a whole, of immense, if not indispensable value? Why is there such a varied opinion as to the value of the glands of internal secretion in therapeutics? Why do some of our profession hold on to the old regime of starvation in Typhoid instead of the treatment by increased caloric intake, and so on down the line?

1. There are those among our ranks who are biased against new methods and new remedies. This may be due to the fact that there is so much literature on patent preparations distributed among the profession, and almost daily a representative

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drops in the office to tell us of some wonderful new discovery, or some new combination of drugs and of their beneficial effects in the various ailments. Some of them must be wrong. The busy doctor soon tires of the same old story and locks himself up mentally against the new. He has no desire to investigate all this vast amount of literature, consequently any new discovery of value is passed up unnoticed with the many patent preparations and nostrums that are constantly appearing on the market.

2. *Expense.*—Radium is found in very limited quantities and is therefore very expensive. Medical men who invest in radium expect a reasonable return on the money invested, and this makes radium rent for a fair sum. When we consider the results obtained from radium as compared with those obtained from surgery the cost of radiotheraphy is really cheaper. The hospital bill, operative risk, etc., are eliminated.

The application of radium is not attended by any dramatic display of skill as is seen when the good operator picks up his scalpel and demonstrates to his audience the wonderful technique which he has developed. The first few days following the operation there is a stormy course, all are anxious. Following the application of radium the reaction is slow. When $50.00 or $100.00 is mentioned for the application of radium, often the patient feels like he is being overcharged, and the family physician looks upon the radiotherapist as receiving a sum in excess of services rendered. Is not radiotheraphy a specialty? Would you care to be constantly handling radium and being exposed to it? Is there no risk? A quotation from the Memorial Hospital, New York: "Radium in the hands of the untrained is one of the most dangerous forces in the world." Example: radium is not only the therapeutic agent of choice in T. B., adenitis and rodent ulcer, but it is the most economical and leaves no scar.

3. *Over Enthusiasm.*—An energetic and progressive member of our profession listens to an enthusiastic speaker tell of the wonderful properties of radium. He becomes enthusiastic and may buy an interest in some local Radium Clinic. His first patient has extensive carcinoma of the cervix. The cauliflower mass is burned away with the cautery and a 50 mg. tube of radium is placed in the cervix and four or five 10 mg. needles

are buried in the cervical stump and left twenty-four to thirty hours. Hemorrhage stops, odor diminishes, the patient gains weight, the cervix becomes smooth, the patient and surgeon are enthusiastic—I say they are too often "over enthusiastic." Other cases are treated. Sooner or later an inoperable carcinoma case comes along, it fails to respond as previous cases did due to metastasis or to overwhelming toxemia, and the enthusiasm is diminished. A year passes, a case returns with a recurrence, enthusiasm is gone and the physician doubts if radium is really of much value.

Gentlemen, we must realize from the beginning that radium has its limitations. The leading radiotherapists do not claim that radium will cure all cancers or even the greater percentage of cancers. Statistics show that 12 to 18 per cent. of inoperable cancer of the cervix are alive 5 years after radium has been used, and these are lives that have been saved. Tell the patient or his family the facts. In carcinoma of the cervix radium is the only specific, and in extensive cases it is the only paliative treatment we have, and allows the patient to live comfortably for one or more years. Does this condemn radium? Dr. Howard Kelly of Baltimore made the following statement six months ago: "Radium is pre-eminent in cancer of the face. We can cure (and I use the word cure unhesitatingly after 13 years of experience) 95% of all cases of cancer of the skin and face, if the disease has not progressed too far." "But radium's greatest achievement is, that marvelous results are sometimes attained by dissipating all of the accessible disease in cases which are so far advanced as to be utterly inoperable, and radium will often take care of recurrences where surgery is helpless." My experience certainly bears out the above. Out of twenty-five cases of carcinoma of the cervix, all but two responded promptly to radium and most of them are clinically well today. In twelve cases of skin cancer and four cases of hemangioma, all have responded in a great way. My first case was a skin cancer the size of a fifty cent piece on the back of the neck; he is well today after two years. He is over 70 years of age and actively engaged in a Homestead Association in this city.

4. *Faulty and Careless Application.*—How often has a case of malignancy come to a surgeon or radiotherapist for aid, and been received with the attitude: He is a poor fellow, and then

I can't do much for him anyway. Radium is applied in a half-hearted way—more as a placebo. The case is not studied with proper reference to age, dosage, screening, method of application, etc. No results are expected. If he got a good result it is a pleasant surprise. This is not the scientific application of radium. Give each case the thought and study required or better not apply radium.

5. *Radium Cases Not Selected.*—How often the radiotherapist is asked to apply radium on a case so extensive that he hesitates to even use radium. I am convinced that many cases should not be treated, for using radium under such circumstances is detrimental to the cause of radium. I have seen these cases often turned away at the Memorial Hospital in New York. A patient comes in with his eye or ear eaten away, pharynx filled with extensive growth, cervix, vaginal and rectal wall one mass of malignancy with recto-vaginal fistula, etc. These patients often come expecting to get well; their physician told them radium would cure them. What must we do? We how Mrs. Blank is. What is her chance? Should the radiotherapist greet his friend with a broad smile and a "thank you doctor"? The value of radium as a therapeutic agent, it may be, is at stake in that particular instance. If it fails, the physician, your friend, is convinced that radium has little or no value.

The surgeon must study the properties and therapeutics of radium if he is to get results. Radium and surgery go hand in hand. The application of radium is in most instances a surgical procedure, as for example the burying of radium needles in the breast or cervix, etc. Operation must often follow its application, or *vice versa*. In fact, most of our leading radiotherapists are surgeons; they study its application and the progress of the case thereby improving technique, dosage, etc. I might say right here that X-ray renders valuable aid in certain definite cases. X-ray is becoming more valuable since the advent of the new machines capable of developing 200.000 volts and more with the generation of more penetrating rays.

When radium, X-ray and surgery are all available and in cases where indicated are used together, better results will follow and radiotherapy will gain more favor among the profession. In closing I say give radium a chance in some of your

cases where it is specific and does its greatest good; such as skin cancer, angioma, lymphadenitis (chronic), toxic goitre, metritis, etc., before resorting to the knife. Do so also in the inoperable carcinoma cases and you will see radium produce wonderful and lasting benefit. Radiotherapy has come to stay, and its scope of usefulness is daily increasing.

In a conservative manner I say radium deserves your conscientious consideration.

DISCUSSION.

Dr. Thomas Benton Sellers: Very often we get impatient and do not give radium a fair chance, especially in treating small uterine fibroids and metrorrhagia during menopause.

I recall a case of metrorrhagia in a woman about forty-five years of age, whom we curretted for diagnosis and gave about 900 mg. hours of radium intra uterine. About ten days later a second dose of 1200 mg. hours was given. The hemorrhage stopped for about three weeks and started again lasting several days, but stopped again. Two years have elapsed and she has been perfectly well since.

We should give a general anaesthetic to most of our carcinomas of the cervix, as well as of the body of the uterus so that we can be absolutely sure as to where we are placing the radium. This will cut down the number of rectal and vesical burns. Many members of our profession have discarded the use of radium on account of these burns, not realizing that a large percentage of them could have been prevented if the radium had been properly applied.

Dr. Charles Henry Voss (closing): There has been quite a lot of discussion about the value of the X-Ray in therapeutics. I just want to say that I mentioned the X-Ray in my paper purposely to let you know that I realize there are cases where it is of immense value, more particularly in carcinoma of the breast, for example, where a large area must be covered.

X-Ray has been used in this country for some years in combination with Radium and Surgery, or alone; and if what we read about wonderful things that are being done in Europe is true, and we have no reason to doubt it, then the percentage of cures of Cancer in the future should steadily increase.

With reference to glands, more particularly tubercular adenitis, radium is undoubtedly the agent of choice in these cases and is specific.

In answer to Dr. H. P. Jones in regard to the glandular mass in the neck of a little girl, patient of his, upon whom I used radium, first I want to state that this glandular enlargment followed immediately a case of Parotitis. It has remained the same size for over a year and failed to yield to intensive medication. I told the family before applying radium that I could guarantee nothing since this condition had existed so long that there was a possible calcareous mass in the gland, or possibly the gland had begun to break down. We know that Radium in cases that have gone this far will not cause the glandular mass to disappear, and when we think of the existing pathology, we can easily understand why.

I believe that the fluctuation in this mass is due to caseous and broken down glandular material and should be evacuated.

New Orleans Medical and Surgical Journal

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EDITORIALS.

INEVITABLE.

As a result of the strenuous efforts necessary to taking over the Journal and getting it out "on time," it would have been strange indeed, if we had not been called upon to make a number of corrections, additions or apologies.

In recording the "genesis" of the Journal as it is today, due credit should have been given the Executive Committee of the State Society. It was this committee which authorized the president of the State Society to organize the Journal and prepare for its publication beginning with the July issue. With this idea in view, the Board of Directors was selected and they in turn appointed the staff of editors.

Attention is called to a number of corrections in the editorial staff. In this connection it seems particularly regrettable that the name of Dr. Homer Dupuy should have been entirely omitted as a member of the Board of Directors. This is especially so in view of the doctor's well-known enthusiasm persistently directed toward the acquisition of the Journal for the Society. That the error will be overlooked with characteristic magnanimity, there is no doubt.

Further information reveals the fact that the necessary authority for the selection of the District Collaborators has already been vested in the Board of Editors. The function of these collaborators will be to furnish the Journal with all available material from their respective districts. The list will be announced as soon as possible.

WOMEN IN MEDICINE

In New Orleans the first of July brought with it the emancipation of women to the ranks of Hospital Internes. Both Charity Hospital and Hotel Dieu now number women physicians among their Interne Staff.

The question as to whether certain women with the necessary training and inclinations have the capacity for doing high-class medical work is no longer even debatable. Just as there have been many remarkably successful women in numerous other occupations which were formerly considered distinctly masculine, it was clearly inevitable that the same type of women should prove equally successful in medicine, when the opportunity was afforded them to learn and practice the science and the art. With their natural aptitude and scrupulousness for detail, it followed as a corollary that in certain branches at least they should even excel their masculine confreres. A number of years ago it was the writer's good fortune to work for a certain period of time under Dr. Hurdon at Johns Hopkins, in Dr. Kelly's Gynecological Laboratory. This experience was a revelation. The correlation of symptoms with gross and microscopical pathology, using both as a basis for logical surgical treatment, was presented in such an unusual, unassuming though masterly fashion, as to leave no doubt in the student's mind

concerning woman's ability, not only to acquire but also forcefully to impart, accurate, practical, scientific knowledge.

That women can successfully practice medicine is amply attested to by the number of individuals who are actually doing so not only in New Orleans and the South but throughout the country at large. But looking at the question from a broader, sociological aspect, women in medicine are after a fashion incongruous.

The practice of medicine would seem to preclude maternity and parentage. There can be no question as to woman's individual right to step out of her natural sphere and repudiate the basic function and privilege of originating and developing a fundamental unit for the state in the form of a family. But the exercise of that right seems unnatural and erratic. It would appear more in keeping for women, in the selection of an avocation, to restrict their choice to a field where the requirements and exigencies are less *personal* than they are in medicine.

Of all occupations the practice of medicine is essentially the most personal. It might be said in fact to be almost exclusively personal. The same is true of the rearing of a family, particularly as regards the woman. The maternal influence in the home cannot be delegated any more than can a delicate surgical procedure, even though the obligation in one instance is implied and in the other absolute. Where two interests are so essentially and intrinsically dependent upon the individual, one or the other must suffer. From the standpoint of usefulness to the commonwealth, which stands out most prominently, the female physician or the mother of a family?

MEDICAL LEGISLATION

Much criticism has been heaped on the Legislature because of the paucity of constructive legislation enacted at the last session. However, there have been several redeeming features, chief among which stands their action on legislation relating to medicine.

The Chiropractic Bill was defeated in Committee by unanimous vote. This is evidence of the fact that our legislators are

willing to be guided by unvarnished facts, and that our profession must be prepared to furnish these when occasion arises. The physician in his daily work should disseminate the facts regarding this spurious science founded on a false antomical and physiological basis. We take this opportunity of commending the series of articles appearing recently in Leslie's Weekly exposing the fallacy of the greatest humbug ever perpetrated on the American public.

A bill prohibiting vivisection on dogs was introduced. The passage of such a bill would have been a great calamity; it would have seriously hampered scientific medical teaching and be a blow to medical progress. Such legislation limited in its scope appears innocent enough and appeals to the finer sentiments of man because it refers to man's best friend—the dog. But in reality it is only an entering wedge for further legislation of a more drastic and comprehensive character. Similar legislation has been attempted in other states but has met with failure. In the last analysis it is only a question of the value of animal life against human life. We are glad to record that this bill likewise failed in committee.

Under the guise of humanity and with a strong appeal to public sympathy the Shepard-Towner Bill found its way into our Legislature. It is paternalistic and socialistic in nature and has been declared unconstitutional by the Attorney General of Massachusetts. The House of Delegates of the American Medical Association, recognizing its undesirable features, put its stamp of disapproval upon it. Our Senate saw the bill in its true light and promptly proceeded to defeat it.

Of great interest to the profession of the State was the Simon Bill exempting physicians from the license tax. There are strong reasons in favor of this bill, and moreover, our new Constitution permits the Legislature to exercise its discretion as to who shall pay the license tax. The long array of arguments, including the principle involved, the fact that all the States save Mississippi and Louisiana have discarded this tax, and the vast amount of charity work performed voluntarily by the medical profession, was of no avail and the bill died in committee by a close vote. The chief objection came from certain lawyers who maintained that the free services occasionally forced upon

them by their code of ethics are of the same nature as the services rendered daily by physicians of their own free will.

The bill providing for the issue of bonds by the Charity Hospital to the amount of three hundred thousand dollars passed both Houses unanimously. It is unfortunate that the Governor could not see fit to affix his signature to this bill, because it was unconstitutional. There is a crying need for new buildings, and if the efficiency of the institution and the welfare of the public are to be promoted, they must be provided for. It is reported that the Board of Administrators with their characteristic zeal and energy will apply to the Board of Liquidation to sanction this bond issue. Let us hope that they will meet with success, as the sum needed is a mere pittance in comparison with the seven million dollars allotted to the Agricultural College.

We cannot dismiss this subject without referring to the appropriation for the maintenance of Charity Hospital. Both the Legislature and the Institution should be congratulated. The Committee displayed a generous spirit of fairness, and, after personally ascertaining the conditions and needs of the hospital, restored the amount originally allotted by the State Board of Affairs. The Hospital gained a big point because its claim for more funds to maintain efficiency, has been proven to be well founded, which establishes a precedent for the future.

PAUL J. GELPI, M. D.

SOCIETY PROCEEDINGS.

PROCEEDINGS OF THE HOTEL DIEU STAFF.

Monthly Meeting for July, 1922.

The President, Dr. Homer Dupuy, in the Chair.

SARCOMA OF THE FACE.

Dr. Joseph A. Danna presented two cases of *Sarcoma of the Face* which he thought were cured by Coley's toxins.

The first was a little girl of 11 years of age, showing a depression in her face just external to the right ala nasi, and an opening in the alveolar process of the right superior maxilla leading into the antrum. The opening was lined with necrotic bone and easily admitted the index finger. Another physician last December removed a small growth from the soft tissues overlying the superior maxilla over the root of the right canine tooth. This was pronounced a fibro sarcoma on rush section and 50 milligrams of radium were inserted for a period of twelve hours. The growth recurred however in spite of two other applications of radium at intervals of six weeks. Coley's toxins were administered over a period of nearly two months, when there was first inflammatory swelling of the growth, followed by gradual subsidence and, finally, a depression in the skin of the face at the point where the growth previously had been. There was a foul discharge from her mouth for some time, when the lateral incisor, canine and first biouspid teeth were easily picked out with a pair of forceps disclosing the present cavity in the superior maxilla.

The second case was one in which the greater portion of the entire right side of the face was missing. All the soft tissues from the side of the nose and midline of the lip outward, to within an inch and a half of the right ear; the lower lid and eye ball; the lower wall of the orbit; the anterior wall of the antrum and the entire superior maxilla, were completely gone. This exposed the posterior and inner wall of the antrum, the under surface of the upper lid, the roof of the orbit and the border of what remained of the masseter muscle and the exposed end of the zygoma. The tongue could be seen through the missing portion of hard palate.

Fig. I. Fig. II.

Fig. 1. Case of sarcoma of face after tumor mass had disappeared, showing depression at tumor site.

Fig. 2. Same case as Fig. 1, partly showing opening in alveolar process.

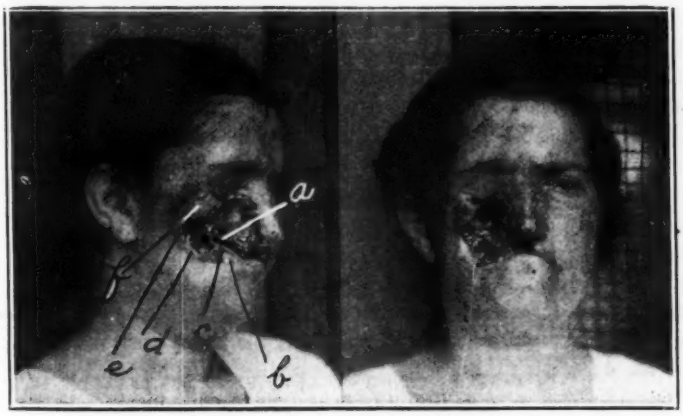

Fig. III. Fig. IV.

Fig. 3. Case of sarcoma of face after tumor mass and great portion of face had sloughed away following administration of Coley's toxins, showing:

a. Edge of hard palate.

b. Lower teeth.

c. Tongue.

d. Healed muco-cutaneous line.

e. Small area not covered by skin or mucous membrane.

Fig. 4. Front view of Fig. 3.

This patient two and a half years ago, developed a small lump under the right cheek which began to grow after being pinched by the examining physician in the course of an examination. The growth was removed and found to be a fibro sarcoma. She was sent to a radiologist who applied radium externally with instruction to return again in six weeks. She did not return to him but returned to Dr. Danna about four mouths later, the growth having recurred and being larger than it was before. She was sent to the Charity Hospital where X-rays were applied, and later an application of radium externally was made. Six weeks later radium needles were inserted into the growth. Up to the time that the radium needles were used the growth continued to grow. Shortly after the radium needles were used it ceased to grow and remained stationary for some time. About two months later, Coley's toxins were started, with the result that the growth broke down and gradually diminished in size until it nearly disappeared. About this time she decided to leave the hospital in spite of entreaties to the contrary and she was not seen again for six months. At this time her right cheek were missing and a large cauliflower growth, about two inches in diameter, stood out on her face at the site of the old growth. She was admitted to Hotel Dieu and given radium treatments at intervals of about three weeks. The radium seemed to diminish the growth in the spot where the radium was applied, but no material impression was made on the size of the growth which gradually continued to increase in size. The growth was now burnt off with a slow cautery, the cautery going through the anterior wall of the superior maxilla without encountering any bone. Radium needles were inserted in the charred mass left by the cauterization, but the growth bloomed forth again. Radium was now used almost continuously for a period of about six weeks without having any marked effect on the growth which continued to increase in size. Coley's toxins were now started, given daily hypodermically, beginning with ½ minim the first day, 1 minim the second day and increasing the dose by 1 minim each day until she got a severe reaction with temperature above 103. She was now kept very sick, with repeated injections of Coley's toxins in increasing doses, and after about six weeks the growth began to slough in

spots. This sloughing process continued until all the missing portion of the face sloughed out.

Dr. Danna stated that he believed that this was a case where radium had been tried faithfully, and that while it was probable that an insufficient quantity of radium had been used no results had been obtained from the radium. He desired to show these cases as cases cured by the Coley's toxins, especially the second case, which had not responded to the other available means of treatment.

Dr. P. B. Salatich hoped that in a few weeks he would be able to report the cure of a cancer of the tongue and commented that we expected results too soon after the application of radium.

The first applications in his case were discouraging at the beginning but eight weeks after the last dose the original focus under the tongue had almost completely healed. This case made him doubt that Coley's toxin was responsible for the benefit derived in Dr. Dana's two cases and raised the question as to whether radium was not really responsible for the improvement, though the results did not show until several weeks had elapsed. He had used Coley's toxin quite often but his cases were extensive and derived no benefit. The hypodermic injections were very painful. He used one or two per cent cocain to prevent this.

Dr. T. J. Dimitry felt that the cases showed the possibility of obtaining improvement with Coley's toxins. He wondered if credit for the "cures" should not go to radium and if the toxins had not simply improved the secondary infection. He thought radium possessed much greater virtue than was generally accepted. Its limitations were granted, but many times insufficient dosage was responsible for its failure to bring about results.

Dr. Dimitry asked if the cases had radium sickness and if any blood studies were made. This might be very instructive. He was pleased to note that the toxin was not necessarily used in the vicinity of the growth as it had no greater merit when so used. As Coley's toxins was a suspension of proteins it had no specificity.

Dr. Lucien Fortier thought that in the case of the little girl, radium was the main factor in bringing about at least the temporary "cure." A radium tube was placed in the wound at the time of operation and several applications of needles were made later in the antrum.

In case two, operation was performed, but no radium was used. The case returned with a recurrence when surface radiation and one or two buried needles were used. After considerable improvement the patient disappeared for six months. She returned again with a large ulcerated growth and was treated by intensive applications of buried needles without any appreciable effect. Cauterization was advised and done, followed by more intensive radium treatment. This did not hold the tumor in check. He felt that most of the credit for the results in the case was due to Coley's toxins.

In treating sarcoma of the antrum the best results were obtained by making an opening through the hard palate, cauterizing and applying massive doses of radium.

Dr. Maurice Gelpi thought that it was too soon to look upon the cases as being cured, even though the primary results were brilliant. His idea was that the cases exemplified the value of **combining** all available methods of treatment and felt that from present indications, the control of the cancer problem would be more likely to result from a multiplicity of treatments than from a single agent. Attention was called to the progressive improvement following the addition of first ligations then radium and now deep X-ray therapy, to the original treatment by heat, zinc chloride and other pastes. He said that both cases should be given the benefit of deep therapy for further protection against recurrence. Radium must have produced at least some of the benefits obtained in both cases.

Dr. J. E. Landry was particularly interested in the second case. He had a similar case in 1919 with a cystic mass on the inner side of the right cheek, just above Steno's duct. The mass was incised and cauterized. This was followed by violent inflammation, rapid growth and pain.

Dr. Landry removed the tumor, which was the size of an olive, and thoroughly encapsulated. Pathological report revealed this growth to be a giant-cell sarcoma. Evidences of recurrence appeared shortly and immediately several radiotherapy treatments were administered without results. Coley's toxins were administered freely with the usual reactions. The treatments were given for several months. The case was considered cured, as after three years there was no evidence of recurrence.

The persistence of Dr. Danna in the use of Coley's toxins was lauded.

Dr. H. W. E. Walther commended Dr. Danna for his persistence in the use of Coley's toxins. He thought that the manner of action of the toxins was of no great consequence and that Coley's toxins should at least be given a trial, even if they only occasionally brought results when surgery, X-ray and radium failed. He recalled another case of Dr. Danna's, that of a boy with an inoperable sarcoma of the kidney the size of an adult head. He attributed the complete disappearance of this tumor to Coley's toxins. He said that every agent should be employed before looking upon the case as hopeless.

Dr. Danna said that while it might be so in the first case, it was not true in the second case that radium had caused the cure, for radium had been used almost continuously for six months without any more effect than the production of a small local slough where a needle had been inserted. It was more than three months after radium had ceased to be used that the first effects were noticed; and when breaking down of the growth commenced, it extended very much deeper and over a much greater area than could possibly have been reached by the radium. In some places the effect was seen three inches away.

The injection of the fluid is not painful, but the local reaction produces a painful, tender swelling.

The injections were not made into the tumor in these cases, but were given in the arms, thighs and chest.

The second case was usually made quite sick for two or three days following the use of radium. There were no blood studies attempted.

He did not desire to be understood as belittling the efficacy of radium in this class of cases as he used radium quite freely and got

better results right along. But the second case had failed, probably because the radium was insufficient in quantity. It was in the hopeless cases that Coley's toxins found its real field, for it reached the growth no matter where it was, though Coley advised injection of the toxins directly into the growth. Furthermore, it reached the metastases no matter where they were, without the need of their being previously located.

He believed the reason Coley's toxins were not more generally known and used was that it was necessary to make the patient very sick and keep him sick for periods of two months or more, repeated two or three times. In only one other case was he able to carry out the treatment to his satisfaction. The family soon begged off and took the patient home; even nurses, interns and the attending surgeon himself felt sorry for the patient after a while and gave it up.

Remarks of Fraternal Delegate, Mississippi State Medical Society, Before the Louisiana State Medical Society, Alexandria, La.

DR. W. A. DEARMAN (Long Beach, Miss.): I wish to express to the Louisiana State Medical Society that I feel it a signal honor conferred upon me in representing the Mississippi State Medical Association in the capacity of Fraternal Delegate and that the opportunity has presented itself for me to be present at your meeting. I bring to you greetings and that feeling of friendly relations from the Mississippi State Medical Association and we hope for a continuance of these relations. In behalf of our society I also want to thank you for the fraternal message that was brought to us at our Laurel meeting last year by Dr. Lynch, your fraternal delegate to our association. Dr. Lynch read a very interesting and instructive paper under the title: "The Diagnosis of Foreign Bodies in the Bronchi and Esophagus." Our State Association meets at Brown's Wells, May 9-10, and we extend to you a most cordial invitation to be present. You will be extended the privileges of the floor and asked to take part in all of our discussions and deliberations. I thank you.

CORRESPONDENCE.

New Orleans, La.

To the Editor New Orleans Medical & Surgical Journal.

Dear Sir: This is in reference to the letter criticising the Diagnostic Clinic, published in your July issue.

Attention is called to the Editorial in the A. M. A. of July 8, 1922, on the subject of Medical Ethics, from which is quoted the following in reference to the amended "Principles of Ethics" of the A. M. A.

"As may be noted, it is recognized that institutions which provide means for treating the sick and which have certain physical attributes which can properly be announced may call attention to these facilities."

This is exactly what the Diagnostic Clinic has done. That there might be some criticism or difference of opinion as to the manner in which their "physical attributes" were announced, is fully conceded by the Clinic. This however is beyond further correction at the present time yet would hardly seem to warrant the type of letter to which this refers. We trust that you will see fit to give this letter the same publicity as was given the correspondence to which this is a reply.

Respectfully yours,

THE DIAGNOSTIC CLINIC,
New Orleans, La.

NEWS ITEMS.

At the annual meeting of the staff of Hôtel Dieu, held July 10th, the following officers were unanimously re-elected to serve for the ensuing year: Dr. Homer Dupuy, president; Dr. E. H. Walet, vice-president; Dr. H. E. Nelson, secretary, and Dr. P. B. Salatich, recorder.

The American Laryngological, Rhinological and Otological Society, at its annual meeting in Washington, D. C., May 4-6, elected Dr. Dunbar Roy, Atlanta, president; Dr. Wm. H. Haskin, New York, secretary, and Dr. Ewing W. Day, Pittsburgh, treasurer.

The American Association of Genito-Urinary Surgeons, at their thirty-fourth annual meeting in Washington, D. C., May 2-3, elected the following officers: Dr. William E. Lower, Cleveland, president; Dr. Richard F. O'Neil, Boston, vice-president; and Dr. Henry G. Bugbee, New York, secretary-treasurer.

The Wisconsin State Board of Medical Examiners state that recognition has been granted by the board to the Loyola University School of Medicine, Chicago, and that graduates of 1920 and succeeding years are eligible to take examinations held by said board. Kentucky has also recently voted recognition to this school.

The American Association of Pathologists and Bacteriologists, meeting in Washington, D. C., May 2-4, elected the following officers: Dr. Paul A. Lewis, Philadelphia, president; Dr. James Ewing, New York, vice-president; Dr. Frank B. Mallory, Boston, treasurer, and Dr. Howard T. Karsner, Cleveland, secretary.

The Congress of Physicians and Surgeons of North America, which met recently, elected the following officers: President, Dr. Frank Billings, Chicago; treasurer, Dr. Francis W. Peabody, Boston, and secretary, Dr. Walter R. Steiner, Hartford.

The American Orthopedic Association, meeting in Washington, D. C., May 2-4, elected Dr. Ralph R. Fitch, Rochester, N. Y., president; Dr. W. S. Baer, Baltimore, president-elect; Dr. Fred

H. Albee New York, vice-president; Dr. John L. Porter, Chicago, secretary, and Dr. De Forest P. Willard, Philadelphia, secretary.

The American Otological Society, at its annual meeting recently elected: Dr. Geo. E. Shambaugh, Chicago, for president; Dr. John B. Rae, New York, vice-president, and Dr. Thomas J. Harris, New York, secretary-treasurer.

The Mid-Western Association of Anesthetists, meeting in St. Louis, elected Dr. B. H. Harms, Omaha, president; Drs. Royal S. Adams, San Antonio, and Francis E. Haines, Chicago, vice-presidents; Dr. Morris H. Clark, Kansas City, Mo., secretary-treasurer.

The American Opthalmological Society recently elected, at their annual meeting in Washington, D. C., president, Dr. William H. Wilmer, Washington, D. C.; vice-president, Dr. Alexander Duane, New York, and secretary-treasurer, Dr. Thomas B. Holloway, Philadelphia.

The semi-annual examination of the Louisiana Nurses Board of Examiners was held in New Orleans and Shreveport, June 26th and 27th. Sixty-eight applicants qualified as registered nurses. The Louisiana Nurses Board of Examiners is composed of the following doctors: John T. Crebbin, president; Joseph S. Hebert, secretary-treasurer; George S. Brown, New Orleans; Fred J. Frater, Shreveport; Robert W. Faulk, Monroe.

NEW HOOKWORM TREATMENT.*

Evidence that is gradually being accumulated by medical men in various parts of the world provides a good basis for the belief that carbon tetrachloride, a cheap and common chemical, is a cure for hookworm in human beings. Recent reports from the Fiji Islands and Ceylon covering thousands of cases show practically 100 per cent of successes.

The discovery of the efficacy of the drug in removing these parasites was made by Dr. Maurice C. Hall of the United States Department of Agriculture, who tested it on dogs and even

*Released for publication by Monday, June 19, 1922, by U. S. Department of Agriculture.

tried out its effects on himself. His results immediately stimulated medical men in many countries to start investigations, and favorable reports are now being received by the department.

In the Bogambra prison at Kandy, Ceylon, a country where hookworm is common, this carbon compound was tried on 14 persons with marked success. Among them was a condemned criminal who offered himself as a subject for a thorough test. He was given a maximum dose of 10 cubic centimeters of the drug, which removed 55 hookworms. Twenty-two days later he was executed. A post-mortem examination showed that all these parasites had been removed. The other convicts apparently were completely freed of the parasites by much smaller doses. No effects other than slight dizziness and a sensation of weight in the stomach were noticed in the case of those receiving less than 10 cubic centimeters of the drug. The prisoner receiving 10 cubic centimeters experienced some nausea and drowsiness.

Twelve thousand natives of the Fiji Islands, according to a telegraphic report recently received in London, have been successfully treated by the same method, a single dose removing all these parasites from 90 per cent of the patients and at least 98 per cent of them from all persons treated. This is the most extensive test of the chemical yet made on human beings.

The almost universal success thus far gives reason to believe that carbon tetrachloride is far superior to the old remedies, thymol and oil of chenopodium. The second of these has given rise to a number of fatalities, probably because of the variable composition of different samples, and thymol has caused the deaths of some patients. Thus far carbon tetrachloride, which is usually given in capsules, has produced no ill effects and does not appear seriously to inconvenience the patient.

The tests made on human beings in various countries, including the large number in Fiji, bear out those made by Dr. Hall. He found that a very small dose, 0.3 of a cubic centimeter to a kilogram of live weight, amounting to less than an ordinary teaspoonful for a 22-pound dog, was effective, but in one case a dog was given about 20 fluid ounces (nearly a half pint) without evidence of injury to the animal. The United States Public Health Service reports that relatively heavy doses given to

monkeys produced no symptoms of poisoning and no noticeable change in any of the organs.

As the evidence piles up, it seems more and more probable that carbon tetrachloride, which is commonly used as a clothes cleaner, will prove to be a cheap, agreeable, and effective treatment for a parasite that is destroying health and reducing human efficiency in millions of people in many parts of the world, including many thousands in our Southern States.

There has recently been opened in this city the Sophie L. Gumbel Training School for Girls. The object of this school is to train girls who have been unusual problems at home or in the regular graded schools. Examinations are made at the school and application should be made to the Superintendent, preferably in person. Miss Helen E. Russell of Boston and New York is Superintendent and Directress of Activities. The examining staff consists of Dr. Charles L. Eshleman, Internist; Drs. Henry Daspit and Walter J. Otis, Neuro-psychiatrists; Prof. J. M. Fletcher, Psychologist.

REMOVALS: Dr. W. B. Allen, from Ringgold to Elizabeth, La.

Dr. K. Allen, from 707 to 842 Maison Blanche Building.

MARRIED: On June 8, Dr. C. A. Wallbillich of N. O. to Miss Emma Laura Sullivan of Tullhoma, Tenn.

Dr. J. D. Young, Covington, La., to Miss Helen Jansen, on June 17th. Dr. Young has but recently returned from Harvard where he has been doing work in neuro-psychiatry. He will locate in Shreveport.

DIED: On Wednesday, July 19, Dr. Wm. D. Roussel, of Patterson, La., age 54.

BOOK REVIEWS AND NOTICES.

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Physical Diagnosis, by W. D. Rose, M.D. Second edition; pp. 736; 309 illustrations. St. Louis; C. V. Mosby Co., 1921. The conception of this work into subdivisions and chapters is splendid, but cannot be done justice to in a work of this size. The classification of rales is scarcely justified by either modern thought or historic precedence. The subject of pulmonary tuberculosis is not well presented as a whole, and incipient pulmonary tuberculosis is given far too little space; the physical signs given as characteristic of this most important condition are not in accord with the views generally expressed in the literature by the highest authorities. The subject of the examination of the bladder, ureters and kidneys is dismissed without even a mention of cystoscopy—certainly the most important diagnostic step in the examination for disease of this system. The author says, "The Kidney is roughly reniform in shape," which can scarcely be considered descriptive English. The book is not to be recommended. C. J.

New Growth and Cancer. Harvard Health Talks, by Simeon Burt Wolbach. The Harvard University Press, 1922. It is remarkable that so much accurate information can be contained in 53 small pages. At the present time, when cancer and its increase has become almost a phobia with the public, a short and popular work of this kind is of inestimable value. The literary style is up to the high standard one would expect of a Harvard professor. The book can be read with profit by doctors and students of medicine, and is to be highly recommended to any of the laity who seek accurate information concerning cancer. C. J.

A Manual of Midwifery, for students and practitioners, by Henry Jellett, B.A., M.D. (Dublin University), F.R., C.P.I., L.M., and by David C Madill, B.A., M.B., B.Ch., B.A.O. (Dublin University), L. M. Third edition; William Wood & Company, New York. According to the notes of the editors, this edition is the revision of a book issued some eleven years ago for the benefit of students and practitioners. The editors have certainly fulfilled their desires in this regard, as the book, from beginning to end, is replete with the most modern instruction and information, offered in such a practical way that students and practitioners will find it a valuable source of ready knowledge.

For example: they particularly stress upon the modern conclusions of the bacteriology of the genital tract, supported by evidences of experimentation and actual clinical experience to bear out their conclusions. Their cuts and illustrations are unusual, portraying in a concise manner the points necessary and desired to be brought out in either obstetrical manipulations or obstetrical surgery.

Containing, as this manual does, the most modern practices and conclusions in midwifery up to date, this edition will prove to be a valuable reference book for general or specific use.

P. T. TALBOT.

Operative Surgery, by J. Shelton Horsley, M.D., F.A.C.S., attending surgeon, St. Elizabeth's Hospital, Richmond, Va. Pp. 721, with 613 illustrations. St. Louis: C. V. Mosby Company, 1921. This is an excellent and compact work on a subject which can be treated only with great difficulty in one volume. The author's individuality is shown in repeated instances. The section on appendicitis will be of particular interest to surgeons in New Orleans who have followed the technic of inverting the stump with a purse string to the practical exclusion of all other methods. The surgery of the stomach and of the intestines is thoroughly covered and amply illustrated. The explanation of the various procedures recommended is terse and vivid and the author's style is exceptionally clear. The book can be highly recommended to the general surgeon. A. E. F.

Supplementary Volume VII of Keen's Surgery, by various authors. Pp. 855, with 359 illustrations. Philadelphia: W. B. Saunders, 1921. A condensed list of subjects treated is as follows: General, Military, Naval, Technic, Fractures, Spine and Peripheral Nerves, Orthopedic, Vascular System. At the beginning of the volume are several special articles on Inflammation, Rabies, Anthrax, Burns, Syhpilis, Gas Gangrene, etc. The influence of the various advances resulting from the treatment of wounds during the war is noted throughout the book. A great deal of space is devoted to a description of the organization of military and naval personnel to secure the maximum efficiency during combat. This will be of interest to a small percentage only of the medical profession. The use of the Thomas splint and its various modifications, the treatment of fractures of the femur, which has just emerged from the era of the rack and thumb screw, are all covered with the utmost clearness and deserve the closest study. Carrel-Dakin method, so generally misunderstood, is discussed with a full realization of its advantages and disadvantages. Orthopedic and reconstructive surgery is also treated at length. The concluding chapter on Military Surgery of the Vascular System was contributed by Dr. Rudolph Matas. It is unnecessary to add that this chapter is the final word on the subject.
A. E. F.

Supplementary Volume VIII, Keen's Surgery. Pp. 960, with 657 illustrations. Philadelphia: W. B. Saunders, 1921. It is not possible to review this work in a few lines. The information on an enormous number of subjects is brought up to date by competent authors. The chapters on the Endocrine System of Glands, by P. P. Vinson; Surgery of the Thyroid, by Charles Mayo; Recent Advances in our Knowledge of Pathology of Goitre, by Louis Wilson; Radium in the Treatment of Malignant and Other Diseases, by William Duane; and the chapter on Appendicitis, by John B. Deaver, will be found of particular interest. As the first volumes of Keen's Surgery become out of date, it is gratifying to note that the high standard set by the editor is being maintained in the supplementary publications. The complete set is a foundation for any surgical library. A. E. F.

PUBLICATIONS RECEIVED.

C. V. MOSBY COMPANY, St. Louis.

Symptoms of Visceral Disease, by Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P.

Applied Chemistry, by Fredus N. Peters, Ph.D.

F. A. DAVIS COMPANY, Philadelphia.

Diseases of Infancy and Childhood, by Louis Fischer, M.D., Vols. 1 and 2, ninth revised edition.

Clinical Diagnosis and Symptoms, by Alfred Martinet, M.D., Paris, Vols. 1 and 2.

Diseases of the Stomach and Upper Alimentary Tract, by Anthony Bassler, M.D., F.A.C.P.

WASHINGTON GOVT. PRINTING OFFICE, Washington, D. C.

United States Naval Medical Bulletin, Vol. 16, No. 6.

Public Health Reports, Vol. 37, Nos. 23, 24, 25, 26, 27.

MISCELLANEOUS.

Handbook of Organization and Method in Hospital Social Service, by Margaret S. Brogden; The Norman Remington Co., Baltimore.

Transactions of the American Pediatric Society, Vol. 33, 1921.

Report to the Citizens' Committee on an Investigation of the Department of Hospitals and Dispensaries, Buffalo, N. Y., by Haven Emerson, M.D.

REPRINTS.

A Local Versus the Constitutional Nature of Cancer, by L. Duncan Bulkley, M.D.;**Insanity,** by F. F. Young, B.S., M.D.; **A Study of the Gall Bladder, by the Lyon-Meltzer Method,** by Curran Pope, M.D.; **A Case Showing Endocrinal Disturbance,** by Curran Pope,

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for May, 1922.

CAUSE	White	Colored	Total
Typhoid Fever	2	1	3
Intermittent Fever (Malarial Cachexia)	1		1
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough			
Diphtheria and Croup			
Influenza	1		1
Cholera Nostras			
Pyemia and Septicemia	2	3	5
Tuberculosis	20	33	62
Cancer	27	19	46
Rheumatism and Gout	1	1	2
Diabetes	4	1	5
Alcoholism	2		2
Encephalitis and Meningitis	1		1
Simple Peritonitis	1	2	3
Locomotor Ataxia	29	10	39
Congestion, Hemorrhage and Softening of Brain	4	1	5
Paralysis	1	1	2
Convulsions of Infancy	3	1	4
Other Diseases of Infancy		1	1
Tetanus	60	32	92
Other Nervous Diseases	3		3
Heart Diseases	16	17	33
Bronchitis		1	1
Pneumonia and Broncho-Pneumonia		1	1
Other Respiratory Diseases		1	1
Ulcer of Stomach	14	6	20
Other Diseases of the Stomach	6		6
Diarrhea, Dysentery and Enteritis	4	2	6
Hernia, Intestinal Obstruction	2	1	3
Cirrhosis of Liver			
Other Diseases of the Liver	7	4	11
Appendicitis	22	17	39
Bright's Disease	15	4	19
Other Genito-Urinary Diseases	8	4	12
Puerperal Diseases	4	2	6
Senile Debility	3	2	5
Suicide	22	11	33
Injuries	58	20	78
All Other Causes			
Total	352	199	551

Still-born Children—White, 21; colored, 18; total, 39.

Population of City (estimated)—White, 295,000; colored, 110,000; total, 378,000.

Death rate per 1000 per annum for month—White, 16.64; colored, 20.73; total, 16.34. Non-residents excluded, 14.46.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 29.99

Mean temperature ..... 82.

Total precipitation ..... 6.45 inches

Prevailing direction of wind, southeast.